DIPTERA OF AUSTRALIA.

By Frederick A. A. Skuse.

Part III.—THE MYCETOPHILIDÆ.

(Plates xxxi, xxxii.)

The Australian species of Mycetophilidæ already recorded amount only to the insignificant total of four, referable to as many different genera; these species were described about thirty-two years ago by Francis Walker in Vol. I. of "Insecta Saundersiana;" since that time our indigenous "fungus-midges" have enjoyed a period comparatively free from molestation, except that in certain localities, where insect-life once held an undisputed dominion, the ruthless hand of man has visited and laid bare large tracts of country once replete with native vegetation which afforded sustenance for legions.

Altogether I have discriminated thirty-one species, but for seventeen of these I have been compelled to create nine distinct new genera, chiefly on account of the venation of the wings, but also because of peculiarities in the structure of the antennæ and palpi, and in some instances in the character of the legs; three of my new genera have eleven species distributed between them, and the remaining six have been formed for the reception of single species, all of which I consider warrant the innovation. Some of these newly-discovered forms appear from their external characters to have a close relationship to old-established genera: but were the scope of these in any instance enlarged, the question might arise, whether by treating a large number of other genera in the same way the total might not be considerably lessened; though by doing so the determination of the contained species

would be made much more difficult, or it would necessitate forming numerous sub-sections whereby to define the peculiarities of several series of species having details of structure in common. Insufficiently characterised genera cause much difficulty, particularly when the type-specimens are not at hand for reference ; and a glance at the synonymy will show to what a lamentable extent worthless genera encumber our classification ; on the other hand, a genus established which at once sums up the joint characters of the species which belong to it, or which serves as an index to one or more species, cannot fail to be of service to the study of such a multitudinous order of insects as the Diptera, whose identity of structure in certain families and sub-families is maintained to such a puzzling degree. Much confusion has been perpetrated by the manner in which some authors have ignored minor details in structure—minor in comparative magnitude, but important in significance ; for instance, the sub-costal cross-vein, auxiliary vein, and the exact position of other veins, to which Winnertz, in his masterly work on the Mycetophilidæ, attaches much importance, have been so unimportant in the opinion of some writers that not only is their mention quite omitted, but they are wanting in the figures employed ostensibly to illustrate the alar-vein system so essential to notice in a newly-described generic or specific form.

The species upon which new generic names have not been conferred, added to those delineated by Walker, belong to the following genera :—*Macrocera* (3), *Ceroplatus* (1), *Platyura* (8), *Sciophila* (1), *Leia* (1), *Trichonta* (2), and *Mycetophila* (2), though, as can be readily seen, it is more than probable that those of Walker will be extremely difficult to determine from his poor descriptions ; as to the localities of the latter, three are stated to be from " Van Diemen's Land " and the fourth from the very vague locality " New Holland."

I think that an investigation of the genital organs of the male would result in very interesting and valuable additions to our knowledge of the Mycetophilidæ, and the characters and structure of these would perhaps prove useful in defining the genera.

There seems to be a great variety in the structure of the holding-forceps of the male; in some genera it is a very complex piece of mechanism provided with numerous spines, claws and setæ, and often cannot fail to elicit wonder from the observer as to what are the uses of the various parts. Amongst the small number of Australian Mycetophilidæ I have studied, I have only been able to give the male genitalia a cursory examination, but in two instances I have figured them.

Winnertz in his Monograph of the Mycetophilidæ draws a summary of the European genera known to him, and in the following pages I have given a translation of this valuable portion of his work, altered to suit the interpetration of the alar-vein system which I adopt; and I have introduced amongst the genera, sketches of as many of the genera established since the work of Winnertz, including those characterized from all parts of the world, as I have been able to make out. My reason for taking this trouble is in order to make easier the recognition of hitherto defined genera, species of any of which, it is not improbable, may be yet discovered in Australia. It is more than possible that there are some established genera of which I have not seen even the names, while there are also others of which I have been able only to give the characteristics as they are presented by the authors who drew them up ; in some instances these latter are insufficient for me to be able to divine their proper place amongst the other genera, and these I have for the present set aside by themselves.

CLASSIFICATION OF THE MYCETOPHILIDÆ.

The Mycetophilidæ are so well-defined, and the systematic position of the genera has been so well settled by the labours of Winnertz, that in the present state of our knowledge of the family no attempt to improve upon the work of this author has been either called for or attempted. I shall not essay an historical account of the classification of the family, through inability to improve upon that already extant in Winnertz's invaluable monograph ; the great knowledge of that author has enabled him to ably pronounce

upon the definitions of this family given by Meigen, Macquart, Zetterstedt, and Haliday, and to fully estimate the validity of the genera either introduced or established by them. Besides giving due consideration to the arbitrary characteristics employed in the formation of an artificial system, Winnertz has not failed to take into account the young stages, manners of life, and metamorphoses as far as available information would allow, with the view to uniting the genera in natural groups. In commenting upon the work of Macquart, Zetterstedt, and Haliday, he points out that these authors have not only placed insects together which lack agreement in their external structure, but moreover have added to Meigen's group (Fungicolæ) insects which even disagree in their metamorphoses and manners of life.

Winnertz deals exclusively with the European Mycetophilidæ, accepts eighteen genera of previous writers, and proposes twenty-four new ones. These are first divided into three sections, and again distributed amongst seven sub-sections. All the ultra-European genera known to me up to the present, added to the European genera characterized since Winnertz wrote his monograph, may be conveniently ranked in one or other of the existing sub-sections. His arrangement of the genera, subject to some modifications in the interpretation of the venation of the wings and in the bestowal of an almost entirely different terminology, stands practically as follows:—

Division into Sections.

Section I.—Second longitudinal vein arising from the fourth longitudinal vein, at the middle of it, or more or less before the middle of it. Marginal cross-vein elongated, very obliquely situated. Inner marginal cell dilated. Anterior branch of the second longitudinal vein seldom missing (in *Diadocidia* only). Anterior branch of the fourth longitudinal vein issuing from the base of the second longitudinal vein. Fifth longitudinal vein generally perfect. Ocelli on the front.

Section II.—Second longitudinal vein arising from the fourth longitudinal vein near the root of the wing. Marginal cross-vein

not elongated. Inner marginal cell not dilated. Anterior branch of the second longitudinal vein always present, very small, situated very near the marginal cross-vein, consequently the marginal cell is very small. Anterior branch of the fourth longitudinal vein issuing from the fourth longitudinal vein beyond, at, or before the middle of it, rarely near the root of it. Fifth longitudinal vein incomplete. Three ocelli on the front.

Section III.—Second longitudinal vein, marginal cross-vein, fifth longitudinal vein and inner marginal cell as in the second section. Anterior branch of the second longitudinal vein always missing, therefore only two sub-marginal cells. Anterior branch of the fourth longitudinal vein arising from the fourth longitudinal vein beyond, at, or before the middle of it, rarely missing, more rarely still the anterior branch of the third longitudinal vein missing. Ocelli three or only two, namely :—

A. *Three on the front.*

B. *Three, one on the inner margin of each of the compound eyes, the third always very small, situated in the middle of the anterior margin of the front.*

C. *Two, one on the inner margin of each of the compound eyes.*

SUMMARY OF THE GENERA.*

SECTION I.

Sub-Section I.—DIADOCIDINÆ.

Genus 1. Diadocidia, Ruthe.

Anterior branch of the second longitudinal vein missing. Anterior branch of the fourth longitudinal vein and the third longitudinal vein issuing from the second longitudinal vein. Fifth longitudinal vein perfect. Inner marginal cell moderately dilated, very short. Surface of the wings hairy.

* Omitting *Eudicrana*, *Allocotocera*, *Monoclona* and *Parexechia*, known to me by name only

Sub-Section II —MYCETOBINÆ.

Anterior branch of the second longitudinal vein large, ending in the costa, and forming with the second longitudinal a fork having its base at or beyond the marginal cross-vein. Anterior branch of the fourth longitudinal vein and the third longitudinal vein issuing from the second longitudinal vein. Fifth longitudinal vein perfect. Inner marginal cell large. Surface of the wing hairy, or only microscopically pubescent.

Genus 2. Mycetobia, Meig.

1. Anterior branch of the second longitudinal vein and second longitudinal vein forming a fork having its base at the marginal cross-vein. Surface of the wings microscopically pubescent.

Genus 3. Ditomyia, Winn.

2. Anterior branch of the second longitudinal vein and second longitudinal vein forming a fork having its base beyond the marginal cross-vein. Surface of the wings hairy.
    a. Base of the fork lying before the base of the third sub-marginal cell. Costal vein extending beyond the tip of the second longitudinal vein.

Genus 4. Plesiastina, Winn.

    b. Base of the fork lying beyond the base of the third sub-marginal cell. Tip of the costal vein uniting with the tip of the second longitudinal vein.

Sub-Section III.—BOLITOPHILINÆ.

Genus 5. Bolitophila, Meig.

Anterior branch of the second longitudinal vein short, lying almost vertically to the costa or to the first longitudinal vein, and forming with the second longitudinal vein a fork with a long petiole. From the second longitudinal vein, bent angularly in the vicinity of the root, issue the anterior branch of the fourth longitudinal vein and the third longitudinal vein. Fifth longi-

tudinal vein perfect. Inner marginal cell large, moderately dilated. Surface of the wing microscopically pubescent. Antennæ very long, setiform.

Sub-Section IV.—MACROCERINÆ.

Genus 6. Macrocera, Meig.

Anterior branch of the second longitudinal vein small, lying in an oblique position, going into the costa, and forming a fork with a long petiole with the strongly curved second longitudinal. Anterior branch of the fourth longitudinal vein arising from the second longitudinal vein near the base, the third longitudinal vein arising from the same vein, a little anterior to the anterior branch of the fourth longitudinal. Fifth longitudinal vein perfect. Inner marginal cell small, moderately dilated. Surface of the wing microscopically pubescent, rarely more hairy. Antennæ very long, filiform.

Sub-section V.—CEROPLATINÆ.

Anterior branch of the second longitudinal vein small, joining the costa or the first longitudinal, forming a fork with a long petiole. Anterior branch of the fourth longitudinal vein arising nearer the base of the latter. Fifth longitudinal vein complete or incomplete. Inner marginal cell short, moderately dilated. Surface of the wing microscopically pubescent.

A. *Proboscis not lengthened.*

Genus 7. Ceroplatus, Bosc.

Antennæ broadly flattened. Palpi not incurved. Legs long and slender. Auxiliary vein reaching the costa before the origin of the third longitudinal vein.

Genus 8. Heteropterna, gen.nov.

Antennæ and palpi as in *Ceroplatus*. Legs short, the tibiæ and tarsi of the hind pair enormously thickened. Auxiliary vein reaching the costa beyond the origin of the third longitudinal vein.

Genus 9. Platyura, Meig.

Antennæ not broadly flattened, somewhat compressed, 2-+14-jointed. Palpi incurved. Auxiliary vein usually united to the first longitudinal vein by the sub-costal cross-vein ; anterior branch of the second longitudinal vein short, ending either in the first longitudinal or the costal vein ; third sub-marginal cell with a very short petiole.

Genus 10. Pseudoplatyura, gen.nov.

Antennæ almost cylindrical, 2-+13-jointed. Palpi incurved. Auxiliary vein not united to the first longitudinal vein by a sub-costal cross-vein and joining the costa before the tip of the marginal cross-vein ; anterior branch of the second longitudinal vein rather long, taking its origin considerably before the tip of the first longitudinal vein, but ending in the costal vein.

B. *Proboscis lengthened.*

Genus 11. Antriadophila, gen.nov.

Antennæ very little compressed, 2-+12-jointed. Palpi incurved. Auxiliary vein not united to the first longitudinal vein by a sub-costal cross-vein, joining the costa immediately before the tip of the marginal cross-vein ; anterior branch of the second longitudinal vein short, joining the costa ; petiole of the third sub-marginal cell about $\frac{1}{3}$ the length of the anterior branch of the fork.

Genus 12. Asindulum, Latr.

Antennæ cylindrical, somewhat compressed, 2-+15-jointed. Palpi incurved. Wings as in *Platyura*. Abdomen with eight segments.

SECTION II.

Sub-section VI.—SCIOPHILINÆ.

Genus 13. Sciophila, Meig.

Tip of the costal vein uniting with the tip of the second longitudinal vein at the apex of the wing. Base of the second posterior cell nearer to the root of the wing than the base of the third sub-marginal cell. Auxiliary sometimes complete and

terminating in the costa above the marginal cell, and sometimes incomplete. Surface of the wing microscopically pubescent. Intermediate coxæ of the ♂ sometimes with an upward bent spine.

Genus 14. Neoempheria, O. Sacken.

Costal vein extending beyond the tip of the second longitudinal vein, but not reaching as far as the apex of the wing. Marginal cell sometimes very much lengthened. All the rest as in *Sciophila*, only that the auxiliary vein is always unshortened and reaches the costa sometimes beyond the marginal cell. No spine on the intermediate coxæ of the ♂.

Genus 15. Polylepta, Winn.

Costal and auxiliary veins as in *Neoempheria*. Inner marginal somewhat shortened. Base of the second posterior cell nearer the base of the third sub-marginal cell than in the preceding, and the branches of the third longitudinal vein longer. Surface of the wing microscopically pubescent. Abdomen long, thin, cylindrical.

Genus 16. Paratinia, Mik.

Costal vein extending beyond the tip of the second longitudinal vein, nearly reaching the apex of the wing Auxiliary vein joining the costa almost inappreciably beyond the base of the marginal cell. Sub-costal cross-vein situated a little beyond the middle of the inner marginal cell and before the base of the third longitudinal vein. Marginal cell trapezoidal, very lengthened. Anterior branch of the fork of the third longitudinal vein twice the length of the petiole. Base of the second posterior cell lying considerably before the base of the third sub-marginal cell. Wings broad, cuneiformly narrowed towards the base, distinctly hairy. Fifth longitudinal vein incomplete. Abdomen of the ♂ seven-segmented, long and very slender.

Genus 17. Homaspis, gen.nov.

Costal vein extending a little beyond the tip of the second longitudinal vein, nearly to the apex of the wing. Auxiliary vein joining the costa over the apex of the marginal cell. Sub-

costal cross-vein situated a little before the apex of the inner marginal cell. Marginal cell very small, nearly square. Third longitudinal fork almost sessile. Second posterior cell small, its base situated almost under the middle of the third sub-marginal cell. Fifth longitudinal vein incomplete. Surface of the wings microscopically pubescent. Abdomen of the ♂ with seven segments.

Genus 18. Lasiosoma, Winn.

Costal vein extending far beyond the tip of the second longitudinal vein, but not as far as the apex of the wing. Auxiliary vein terminating in the costa far beyond the small marginal cell. Fork of the third longitudinal vein long, sessile, or its petiole very short. Base of the second posterior cell situated far beyond the base of the third sub-marginal cell. Inner marginal cell short. Surface of the wing more or less distinctly pubescent.

Genus 19. Empalia, Winn.

Costal vein as in *Lasiosoma*. Auxiliary vein ending in the costa over the greatly shortened marginal cell. Fork of the third longitudinal vein with a moderately long petiole. Base of the second posterior cell nearer the root of the wing than the base of the third sub-marginal cell. Surface of the wing microscopically pubescent.

Genus 20. Apolephthisa, Grz.

Costal vein as in *Empalia*. Auxiliary vein ending in the costa before the middle of the marginal cell; without sub-costal cross-vein. Petiole of the third sub-marginal cell about one-third the length of the fork. Marginal cell twice as long as broad. Base of the second posterior cell situated before the base of the third sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen with seven segments.

Genus 21. Tetragoneura, Winn.

Costal vein as in the two preceding genera. Auxiliary vein small, bent posteriorly, ending in the first longitudinal vein far before the marginal cell, or shortened to a tooth. The marginal

cell far beyond the middle of the first longitudinal vein. Inner marginal cell much lengthened. Fork of the third longitudinal vein with a moderately long petiole. Base of the second posterior cell lying before the base of the third sub-marginal cell, with *T. hirta* (a European species) situated far under the base of the inner marginal cell. Surface of the wing microscopically pubescent.

SECTION III.

Sub-section VII.—MYCETOPHILINÆ.

A. *Three ocelli on the front.*

Genus 22. Syntemna, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein large, broken off at the sub-costal cross-vein. Basal portion of the second longitudinal vein and the marginal cross-vein equally long. Inner marginal cell short, extending somewhat beyond the root of the third longitudinal vein. Fork of the third longitudinal vein with a tolerably long petiole. Base of the second posterior cell situated before the base of the second sub-marginal cell. Surface of the wing hairy. Abdomen with seven segments.

Genus 23. Leptomorphus, Curt.

Costal vein scarcely extending beyond the tip of the second longitudinal vein. Auxiliary vein large, ending in the costa almost at the middle of the anterior border, united to the first longitudinal vein by the sub-costal cross-vein, which latter stands a little before the apex. The basal portion of the second longitudinal vein about double the length of the marginal cross-vein. Inner marginal cell short, extending a little beyond the root of the third longitudinal vein. Fork of the third longitudinal vein with a moderately long petiole. Base of the second posterior cell lying almost under the root of the second longitudinal vein. Surface of the wing apparently with a moderately distinct pubescence. Abdomen with seven segments.

Genus 24. Anaclinia, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein large, ending in the costa a little before the middle of the anterior border, united to the first longitudinal vein by the sub-costal cross-vein which is situated before the middle. Basal portion of the second longitudinal vein and the marginal cross-vein equally long. Anterior branch of the third longitudinal vein incomplete, not connected with the third longitudinal vein. Inner marginal cell short, extending a little beyond the root of the third longitudinal vein. Base of the second posterior cell situated beyond the root of the second longitudinal vein. Surface of the wing distinctly microscopically pubescent. Abdomen with seven segments.

Genus 25. Boletina, Staeger.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein very large, terminating in the costa at the middle or a little before the middle of the anterior margin, and united to the first longitudinal vein by the sub-costal cross-vein. Sub-costal cross-vein rarely missing (in the European species *B. dispar*). Basal portion of the second longitudinal vein $1\frac{1}{2}$ to twice the length of the marginal cross-vein. Inner marginal cell short, its apex lying before the base of the second sub-marginal cell. Fork of the third longitudinal vein long, its petiole short. Base of the second posterior cell situated before the base of the second sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen with seven segments.

Genus 26. Gnoriste, Meig.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein and sub-costal cross-vein as in *Boletina*. Inner marginal cell long, its apex situated over the base of the second sub-marginal cell. Fork of the third longitudinal vein long, its petiole very short. Base of the second posterior cell before the

base of the second sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen with seven segments. Proboscis prolonged in the shape of a beak.

Genus 27. PHTHINIA, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein and transverse shoulder vein as in *Boletina*. Inner marginal cell lengthened, its apex lying over the base of the second sub-marginal cell. Fork of the third longitudinal vein long, its petiole very short. Second posterior cell very short, widely open, its base situated beyond the base of the second sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen long, slender, with seven segments. Antennæ long, filiform.

Genus. 28 NEOGLAPHYROPTERA, O. Sacken.

Tip of the costal vein uniting with the tip of the second longitudinal vein much before the apex of the wing. Auxiliary vein moderately large, terminating in the costa. Sub-costal cross-vein approaching the tip of the auxiliary vein. Marginal cross-vein approaching the tip of the first longitudinal vein, consequently the inner marginal cell is very long, its apex lying beyond the base of the second sub-marginal cell and beyond the middle of the wing. Fork of the third longitudinal vein long, its petiole tolerably short. Base of the second posterior cell situated considerably before the base of the second sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen with seven segments.

Genus 29. ACRODICRANIA, gen.nov.

Costal vein extending much beyond the tip of the second longitudinal vein. Auxiliary vein joining the costa almost over or somewhat before the origin of the third longitudinal vein, united to the first longitudinal by the sub-costal cross-vein. Marginal cross-vein almost opposite the middle of the wing. Fork of the third longitudinal vein about twice the length of its petiole; tip of the anterior branch joining the margin as much above the apex of the wing as that of the posterior branch does

below it. Anterior branch of the fourth longitudinal vein detached at the base. Base of the second posterior cell situated a little before the origin of the third longitudinal vein. Wing microscopically pubescent. Abdomen with eight segments.

Genus 30. Leia, Meigen.

Costal vein extending considerably beyond the tip of the second longitudinal vein. Auxiliary vein large, ending in the costa. Sub-costal cross-vein missing. Marginal cross-vein situated far beyond the middle of the first longitudinal vein. Inner marginal cell much lengthened, its apex situated about over the middle of the wing. Anterior branch of the third longitudinal vein short, fourth longitudinal vein long, the root of both missing. Base of the second posterior cell lying about under the middle of the inner marginal cell. Surface of the wing microscopically pubescent. Abdomen with six segments.

Genus 31. Ateleia, gen.nov.

Costal vein extending far beyond the tip of the second longitudinal vein. Auxiliary vein joining the costa much before the origin of the third longitudinal vein. Sub-costal cross-vein situated about the middle of the auxiliary vein. Anterior branches of the third and fourth longitudinal veins both detached. Marginal cross-vein situated near the tip of the first longitudinal vein, consequently the inner marginal cell very long. Base of the second posterior cell situated much before the origin of the third longitudinal vein. Fifth longitudinal vein distinct. Surface of the wing microscopically pubescent. Abdomen with six segments.

Genus 32. Coelosia, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein large, ending in the costa. Sub-costal cross-vein missing. Inner marginal cell somewhat lengthened, its apex lying almost over the base of the second sub-marginal cell. Fork of the third longitudinal vein long, its petiole somewhat

short. Second posterior cell small and wide open, its base situated far beyond the base of the second sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen with six segments.

Genus 33. Acnemia, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein large, terminating in the costa, and united to the first longitudinal vein by the sub-costal cross-vein. Inner marginal cell short. Fork of the third longitudinal vein long, its petiole short. Anterior branch of the fourth longitudinal vein missing. Surface of the wing microscopically pubescent. Abdomen with six segments.

Genus 34. Trizygia, gen.nov.

Costal vein extending considerably beyond the tip of the second longitudinal vein. Auxiliary vein ending in the costa beyond the marginal cross-vein, united to the first longitudinal vein by the sub-costal cross-vein. Marginal cross-vein situated considerably before the middle of the first longitudinal vein. Third longitudinal vein without an anterior branch. Fourth longitudinal vein a little arcuated, the anterior branch detached, appearing as a short piece of a vein, joining the margin. Fifth longitudinal vein missing. Wing microscopically pubescent, the hairs of distinctly two lengths. Abdomen with six segments.

Genus 35. Aphelomera, gen.nov.

Costal vein extending far beyond the tip of the second longitudinal vein, stopping a little before the apex of the wing. Auxiliary vein joining the costa a short distance before the marginal cross-vein; no sub-costal cross-vein. Marginal cross-vein situated very much before the middle of the first longitudinal vein. Third longitudinal vein detached from the second longitudinal, starting in the wing-disk considerably beyond the marginal cross-vein; no anterior branch. Anterior branch of the fourth longitudinal vein quite detached, appearing as a short piece

of a vein, joining the margin. Fifth longitudinal vein very rudimentary. Wing microscopically pubescent. Abdomen with six segments.

Genus 36. Azana, Walk.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein a short rudiment. Inner marginal cell very narrow, almost linear. Anterior branch of the third longitudinal vein, anterior branch of the fourth longitudinal vein, and the fifth longitudinal vein missing. Surface of the wing microscopically pubescent. Abdomen with six segments.

Genus 37. Parastemma, Grz.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein very short, terminating in the first longitudinal vein; sub-costal cross-vein missing. Inner marginal cell lengthened, its apex, however, not reaching as far as the base of the second sub-marginal cell. Petiole of the second sub-marginal cell moderately long. Base of the second posterior cell situated before the base of the second sub-marginal cell. Surface of the wing microscopically pubescent. Abdomen with seven segments.

B. Three ocelli, one on the inner border of each of the compound eyes, the third one situated in the middle of the anterior border of the front.

Sub-costal cross-vein missing.

Surface of the wing microscopically pubescent.

Abdomen of the ♂ with six segments.

Genus 38. Docosia, Winn.

Costal vein extending far beyond the tip of the second longitudinal vein. Auxiliary vein moderately long, bent posteriorly, ending in the first longitudinal vein, or bent anteriorly without reaching the costa. Apex of the inner marginal cell lying before the base of the second sub-marginal cell or somewhat beyond it. Fork of the third longitudinal vein long, its petiole short. Base of the second posterior cell lying immediately before the base of the second sub-marginal cell.

Genus 39. Brachypeza, Winn.

Tip of the costal vein uniting with the tip of the second longitudinal vein before the apex of the wing. Auxiliary vein short, bent posteriorly, ending in the first longitudinal vein. Inner marginal cell long, its apex lying over the base of the second sub-marginal cell. Fork of the third longitudinal vein with a short petiole. Second posterior cell extended, its base lying under the middle of the inner marginal cell, and much before the base of the second sub-marginal cell. Fifth longitudinal vein short and delicate. Flagellar joints of the antennæ annular, compressed, very compact. Legs strong, all the femora, and the fore-legs short; tibiæ almost claviform.

Genus 40. Rymosia, Winn.

Tips of the costal and second longitudinal veins uniting at a distance before the apex of the wing. Auxiliary vein very short, ending in the first longitudinal vein, or short and broken off. Inner marginal cell long, its apex lying above or somewhat beyond the base of the second sub-marginal cell. Petiole of the third longitudinal fork very short. Second posterior cell extended, narrowing from its middle to the base, the base lying before the root of the second longitudinal vein, almost under the middle of the inner marginal cell. Flagellar joints of the antennæ cylindrical. Legs long and slender.

Genus 41. Allodia, Winn.

Costal and second longitudinal veins as in *Rymosia*. Auxiliary vein short, bent posteriorly to the first longitudinal vein, or being only like a short tooth. Apex of the inner marginal cell before the base of the second sub-marginal cell. Petiole of the third longitudinal fork short. Second posterior cell not extended or only slightly, its base lying under the petiole of the fork of the third longitudinal vein. Fifth longitudinal vein short, disappearing before the base of the second posterior cell. Legs slender.

Genus 42. Brachycampta, Winn.

Wing as in *Allodia*. Auxiliary vein always very small, bent towards the first longitudinal vein. Second posterior cell more or less extended, its base lying much before the base of the second sub-marginal cell, sometimes before the root of the second longitudinal vein. Fifth longitudinal vein missing. Legs slender.

Genus 43. Trichonta, Winn.

Costal vein extending almost imperceptibly beyond the tip of the second longitudinal vein. Auxiliary vein large, running parallel with the first longitudinal vein, in which it ends bent downwards. Apex of the inner marginal cell lying over the short petiole of the fork of the third longitudinal; the base of the second posterior cell, which is not extended, lies sometimes before, sometimes under, sometimes beyond the base of the second sub-marginal cell. Fifth longitudinal vein delicate, very short or only rudimentary. Legs slender.

Genus 44. Anatella, Winn.

Costal vein extending very much beyond the tip of the second longitudinal vein, almost to the apex of the wing. Auxiliary vein very small, bent posteriorly. Apex of the inner marginal cell lying above the petiole of the fork of the third longitudinal; the base of the second posterior cell, which is not extended, lies sometimes before, sometimes under, and sometimes beyond the base of the second sub-marginal cell. Fifth longitudinal vein delicate, disappearing before the base of the second posterior cell. Legs long, the tibial spurs unequal in length.

Genus 45. Phronia, Winn.

Costal vein sometimes extending almost imperceptibly beyond the tip of the second longitudinal vein. Auxiliary vein incomplete, bent anteriorly, not reaching the costa, rarely going completely into the costa. Apex of the inner marginal cell lying over the short petiole of the fork of the third longitudinal vein. Second

posterior cell very small, wide open, its base situated far beyond the base of the second sub-marginal cell. Fifth longitudinal vein rudimentary, scarcely perceptible. Legs slender.

Genus 46. Exechia, Winn.

Tips of the costal and second longitudinal veins uniting at a greater or less distance from the apex of the wing. Auxiliary vein short, bent posteriorly, ending in the first longitudinal vein, or broken off, forming only a tooth. Base of the inner marginal cell lying over or beyond the base of the second sub-marginal cell; the base of the second posterior cell more or less beyond the base of the second sub-marginal cell. Petiole of the third longitudinal fork short. Fifth longitudinal vein broken off under or before the base of the second posterior cell, or disappearing. Sixth longitudinal vein large. Legs very slender.

Genus 47. Zygomyia, Winn.

Tips of the costal and second longitudinal veins uniting far before the apex of the wing. Auxiliary vein incomplete, bent anteriorly, gradually disappearing or only forming a tooth. Apex of the inner marginal cell not situated beyond the base of the second sub-marginal cell. Petiole of the fork of the third longitudinal vein short. Anterior branch of the fourth longitudinal vein wanting. Fifth longitudinal vein incomplete. Sixth longitudinal vein in most cases large.

Genus 48. Sceptonia, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Costal, first longitudinal, and second longitudinal veins approaching one another, running almost parallel. Petiole of the fork of the third longitudinal short. Apex of the inner marginal cell lying over the petiole of the third longitudinal fork. Anterior branch of the fourth longitudinal vein, and the fifth longitudinal vein missing. Sixth longitudinal vein very large.

Genus 49. Epicypta, Winn.

Costal vein extending beyond the tip of the second longitudinal vein. Auxiliary vein incomplete, bent anteriorly. Petiole of the fork of the third longitudinal short. Apex of the inner marginal cell lying over the base of the second sub-marginal cell. Second sub-marginal cell and the second posterior cell stretched, almost equally long, the base of the latter lying under or before the base of the former. Fifth longitudinal vein rudimentary or entirely missing. Sixth longitudinal vein very large.

Genus 50. Mycothera, Winn.

Tips of the costal and second longitudinal veins uniting at some distance before the apex of the wing. Auxiliary vein incomplete, bent anteriorly. Petiole of the third longitudinal fork short. Apex of the inner marginal cell lying over the base of the second sub-marginal cell. Branches of the fourth longitudinal vein a little inclined towards one another at the tips. Fifth longitudinal vein incomplete. Sixth longitudinal vein stout.

C. *Two ocelli, one on the inner border of each of the compound eyes.*

Surface of the wing microscopically pubescent.

Costal vein not extending beyond the tip of the second longitudinal vein.

Sub-costal cross-vein missing.

Genus 51. Mycetophila, Meig.

Auxiliary vein incomplete, bent anteriorly. Apex of the inner marginal cell lying over the base of the second sub-marginal cell. Fork of the third longitudinal vein with a very short petiole or almost sessile. Base of the second posterior cell before, under or a little beyond the base of the second sub-marginal cell. Branches of the fourth longitudinal fork inclined to one another towards their tips. Fifth longitudinal vein incomplete, broken off before the base of the second posterior cell or disappearing. Abdomen of the ♂ with six segments.

Genus 52. Brachydicrania, gen.nov.

Auxiliary vein incomplete, very short, bent posteriorly. Apex of the inner marginal cell lying over the base of the second sub-marginal cell. Fork of the third longitudinal vein with a very short petiole. Second posterior cell small, its base situated far beyond the base of the second sub-marginal cell. Branches of the fourth longitudinal fork divergent. Fifth longitudinal vein incomplete, long, ending just before the base of the second posterior cell. Sixth longitudinal vein large. Abdomen of the ♂ with six segments.

Genus 53. Dynatosoma, Winn.

Auxiliary vein bent posteriorly, ending in the first longitudinal vein. Apex of the inner marginal cell immediately before or over the base of the second sub-marginal cell. Petiole of the fork of the third longitudinal very short. Base of the second posterior cell under or beyond the base of the second sub-marginal cell. Fifth longitudinal vein very stout, long and broken off under the second posterior cell. Abdomen of the ♂ with six segments.

Genus 54. Cordyla, Meig.

Auxiliary vein as a short tooth, bent posteriorly. Apex of the inner marginal cell lying over the fore part of the petiole of the third longitudinal fork; the petiole somewhat long. Second sub-marginal cell narrow. Third longitudinal vein frequently disappearing before the margin. Second posterior cell large, wide open, the base before, under or beyond the base of the second sub-marginal cell. Fifth longitudinal vein incomplete. Sixth longitudinal vein large. Abdomen with seven segments.

INCERTÆ SEDIS.

Genus 55. Cnephæophila, Phil.

"Ocelli duo. Antennæ caput cum thorace superantes, 16-articulatæ; articulis duobus primis crassis reliquis cylindricis. Alæ cellula basilari unica brevi; marginalibus duabus, prima

brevissima sub-quadrata, secunda longissima arcuata, apicem alæ formante ; sub-marginali longa, arcuata, posticis tribus (secunda cum cellula basilari secunda confusa). Tibiæ apice calcaratæ, cæterum inermes."

Genus 56. Platyroptilon, Westw.

"Sub-genus novum *Platyuris* typicis affine, attamen antennis flabellatis distinctum. Caput mediocre, haud rostratum, oculis maximis subtus basin antennarum conjunctis : ocellos 2 magnos approximatos tantum vidi. Os indistinctum. Antennæ breves, 12-articulatæ, articulis brevibus, 3-11 singulatim ramum longum pilosum emittentibus, 12mo elongato. Alæ absque cellula parva sub-quadrata, vena 1ma longitudinali ante apicem ramulum parvum obliquum, ad costam extensum, emittente. Pedes satis graciles et elongati, posticorum tibiis calcaribus duobus acutis armatis, articulo 1mo longo et reliquis parum crassiori. Abdomen elongatum gracile."

Genus 57. Diomonus, Walk.

"Resembles *Platyura* as regards its antennæ, while its wings are those of *Leptomorphus*, except that the areola under the anterior margin of the wing, absent in that genus, is present in this."

Obs.—From the above it appears that *Diomonus* belongs to the Sciophilinæ, and should probably come near *Empheria* ; Walker in his "Notes on Diptera" puts this genus amongst the Ceratoplinæ (Ceroplatinæ), between the genera *Platyroptilon* and *Asindulum*, evidently regarding the structure of the antennæ of more importance than the venation of the wings.

Genus 58. Pseudosciara, Sch.

"Head roundish. Eyes reniform. Front broad. Ocelli two. Antennæ 2-+10-jointed, the flagellar joints longer than broad, cylindrical, finely haired. Palpi incurved, four-jointed, thick at the base, the last two joints very long and slender. Thorax moderately arched, without a transverse suture. Scutellum small.

Abdomen cylindrical, slender, with short close hair, the ♂ genital closed, the end of the abdomen club-shaped and thickened. Legs tolerably long; coxæ tolerably robust, elongated; femora shorter; tarsi longer than the tibiæ; the fore-femora as long, or scarcely as long, as the coxæ. Tibial spurs large. Wings microscopically pubescent, the anterior border with close short hairs; posterior border ciliated. Discoidal vein distinctly haired; medial vein rudimentary, very short, gradually disappearing; sub-costal vein joining the costa far beyond the middle of the wing; cubital vein issuing in a steep way out of the sub-costal vein, nearer to the tip of the latter; the small cross-vein running in the same direction as the cubital vein, appearing as a continuation of the latter; the portion in front of the point where the discoidal vein branches off to the cubital vein 6-8 times as long as the steep basal portion of the cubital vein; discoidal vein branching off beyond the tip of the sub-costal vein, the petiole much longer than the fork, the branches widely separated, the anterior somewhat arched. Postical vein branching far before the middle of the wing, the fork small at the base, then suddenly widened."

List of the Genera introduced into the Mycetophilidæ since the *Tipula* of Linnæus, the synonyms, doubtful genera, those named only or insufficiently characterised, and genera now deposited in other families being put in italics:—

Ceroplatus, Bosc, Act. Soc. Hist. Nat. de Paris, I. p. 42, 1792.
Macrocera, Meigen, Illiger's Magazine, II. p. 261, 1803.
Mycetophila, Meig. l.c. p. 261.
Cordyla, Meig. l.c. p. 263.
Sciara, Meig. l.c. (type of the Sciaridæ).
Platyura, Meig. l.c. p. 264.
Asindulum, Latreille, Hist. Nat. des Crus. et des Ins. XIV. p. 290, 1804.
Molobrus, Latr. N. Dict. d'Hist. Nat. (syn. Sciara).
Campylomyza, Meig. System. Beschr. I. p. 101, 1818 [now included in Cecidomyidæ, but Haliday (Ins. Brit. Dip. III. 6, 1851,) places it in Mycetophilidæ].

Dixa, Meig. l.c. p. 216 (now separate family, Dixidæ).

Bolitophila, Meig. l.c. p. 220.

Synapha, Meig. l.c. p. 227 (considered an abnormal form).

Mycetobia, Meig. l.c. p. 229.

Gnoriste, Meig. l.c. p. 243.

Sciophila, Meig. l.c. p. 245.

Leia, Meig. l.c. p. 253.

Lestremia, Macquart, Dipt. du Nord Fr. p. 173, 1826 (now belonging to Cecidomyidæ).

Zygoneura, Meig. System. Beschr. VI. p. 304, 1830 (now included in Sciaridæ).

Leptomorphus, Curtis, Brit. Entom. VIII. p. 365, 1831.

Diadocidia, Ruthe, Isis, XI. p. 1210.

Catocha, Haliday, Ent. Mag. I. p. 156, 1833 (now included in Cecidomyidæ).

Anarete, Hal. l.c. (now included in Cecidomyidæ).

Brachypalpus, Macq. S. à B. I. p. 144, 1834 (Syn. Cordyla).

Macroneura, Macq. l.c. p. 146 (Syn. Diadocidia).

Chenesia, Macq. l.c. p. 151 [Syn. Orphnephila, Hal. (1830) now separate family, Orphnephilidæ).

Planetes, Walck. Ent. Mag. XII. 1835 (Syn. Sciara).

Messala, Curtis, Brit. Entom. XIII. p. 581, 1836 (Syn. Bolitophila).

Planetella, Westwood, Int. Mod. Cl. Ins. II. Generic synopsis, p. 126, 1840 (Syn. Sciara).

Pachyneura, Zetterstedt, Ins. Lapp. (now referred to Bibionidæ).

Boletina, Staeger, Kröjer's Tidsskr. III. p. 234.

Cecidogona, Loew, Stett. Ent. Zeit. V. p. 324, 1844 (now included in Cecidomyidæ).

Ditomyia, Winnertz, Stett. Ent. Zeit. VII. p. 15, 1846.

Macrorrhyncha, Winn. l.c. p, 17 (Syn. Asindulum).

Tetragoneura, Winn. l.c. p. 18.

Microsciara, Rondani, Nuove Ann. d. Sc. Nat. ser. 2, VI. p. 263.

Diomonus, Walker, List. Ins. Dipt. Brit. Mus. I. p. 87, 1848.

Symmerus, Walk. l.c. p. 88 (Syn. Plesiastina).

Platyroptilon, Westw. Trans. Ent. Soc. V. p. 231, 1849.

Sciobra, Loew, Bernstein fauna, p. 34, 1850. } Fossil forms found in amber. It appears that these genera have been named only.

Dianepsia, Loew, l.c.

Heterotrica, Loew, l.c.

Aclada, Loew, l.c. p. 35.

Epidapus, Hal. Ins. Brit. Dipt. I. p. 7, 1851 (now included in Sciaridæ).

Pleasiastina, Winn. Stett. Ent. Zeit. XIII. p. 55, 1852.

Cerotelion, Rond. Prodr. Dipterol. Ital. I. p. 191, 1856. } Insufficiently characterized.

Mycomya, Rond. l.c. p. 194.

Fungina, Rond. l.c.

Lejomya, Rond. l.c. p. 195.

Mycetina, Rond. l.c.

Neuratelia, Rond. l.c.

Pietopalpus, Rond. l.c. p. 196.

Bolithobia, Rond. l.c.

Mycetomyza, Rond. l.c. p. 197.

Bolithomyza, Rond. l.c.

Yposatæa, Rond. l.c. p. 198.

Neurolyga, Rond. l.c. p. 199.

Azana, Walk Ins. Brit. III. p. 26.

Agaromyia, Rond. Prodr. Dipterol. Ital. IV. p. 12, 1861. } Insufficiently characterized.

Mycosia, Rond. l.c.

Mycozetæa, Rond. l.c.

Mycetoica, Rond. l.c.

Empheria, Winn. V. z-b. G. Wien, XIII. p. 738, 1863 (Syn. Neoempheria).

Polylepta, Winn. l.c. p. 745.

Lasiosoma, Winn. l.c. p. 748.

Empalia, Winn. l.c. p. 762.

Syntemna, Winn. l.c. p. 767.

Anaclinia, Winn. l.c. p. 770.

Phthinia, Winn. l.c. p. 779.

Glaphyroptera, Winn. l.c. p. 781 (syn. Neoglaphyroptera).

Coelosia, Winn. l.c. 796.

Acnemia, Winn. l.c. p. 798.

Docosia, Winn. l.c. p. 802.

Brachypeza, Winn. l.c. p. 806.

Rymosia, Winn. l.c. p. 810.

Allodia, Winn. l.c. p. 826.

Brachycampta, Winn. l.c. p. 833.

Trichonta, Winn. l.c. p. 847.

Anatella, Winn. l.c. p. 854.

Phronia, Winn. l.c. p. 857.

Exechia, Winn. l.c. p. 879.

Zygomyia, Winn. l.c. p. 901.

Sceptonia, Winn. l.c. p. 907.

Epicypta, Winn. l.c. p. 909.

Mycothera, Winn. l.c. p. 913.

Dynatosoma, Winn. l.c. p. 947.

Geneja, Lioy, Atti. Ist. Ven. ser. 3, IX. p. 229, 1864 (Syn. Macrocera).

Cnephæophila, Philippi, V. z.-b. G. Wien, XV. p. 618, 1865.

Centrocnemis, Phil. l.c. p. 619 (Syn. Pleasiastina).

Agaricobia, Phil. l.c. p. 626 (Syn. Acnemia).

Pseudosciara, Schiner, V. z.-b. G. Wien, XVI. p. 930, 1866.

Trichosia, Winn. V. z.-b. G. Wien, XVIII. p. 173, 1867 (included in Sciaridæ).

Cratyna, Winn. l.c. p. 176 (included in Sciaridæ).

Corynoptera, Winn. l.c. p. 177 (included in Sciaridæ).

Bradysia, Winn. l.c. p. 180 (included in Sciaridæ).

Eudicrana, Loew, Berl. Ent. Zeit. IX. p. 141, 1869 (unknown to me).

Paratinia, Mik, V. z.-b. G. Wien, XXIV. p. 330, 1874.

Stageria, Wulp, Tijdschr. Ent. XIX. p. xlix. 1876 (Syn. Monoclona).

Neoempheria, O.Sacken, Catl. Dipt. N. America, 2nd ed. p. 9, 1878.

Neoglaphyroptera, O.Sacken, l.c. p. 10.

Parastemma, Grzegorzek, Berl. Ent. Zeit. XXIX. p. 199, 1885.

Apolephthisa, Grz. l.c. p. 205.

Eurycera, Dziedzicki, Pam. Fizy. (Syn. Allocotocera).

Allocotocera, Mik, Wien. Ent. Zeit. V. p. 102, 1886 (unknown to me).

Monoclona, Mik, l.c. p. 279 (unknown to me).

Parexechia, Becher, Ins. von Jan Mayen, p. 62 (unknown to me).

Heteropterna, gen. nov. proposed in the present contibution, p. 1166.

Pseudoplatyura, l.c. p. 1180.

Antriadophila, l.c. p. 1183.

Homaspis, l.c. p. 1191.

Acrodicrania, l.c. p. 1194.

Ateleia, l c, p. 1201.

Trizygia, l.c. p. 1204.

Aphelomera, l.c. p. 1206.

Brachydicrania, l.c. p. 1215.

Characters of the Family.

Habits, &c.

The larvæ of the Mycetophilidæ are generally cylindrical, attenuated towards both extremities, soft, fleshy, smooth or a little wrinkled, moist, often viscous, more or less translucent, with twelve more or less clearly determinable segments in addition to the head. Stigmata placed one pair on the first segment of the thoracic region and one pair on each of the abdominal segments from the first to the seventh inclusive. Head horny. Short palpi and mandibles occasionally present, and also generally rudimentary antennæ. The above is a very general summary of the characters; a more precise one it is difficult to draw for the reason that the larvæ vary somewhat in form. Comparatively little appears to have been observed and recorded with regard to the first stages and life-histories of the Mycetophilidæ, and nothing whatever has yet been done in this direction in Australia.

The larvæ live on the juices of fungi and decaying vegetable matter; they have been found most abundantly in Europe in the rotten trunks of trees, and fungi belonging to the genera *Agaricus*, *Polyporus*, *Boletus*, *Hydnum*, and *Dædalea*, all of which, and many more, have their representatives in Australia. It does not seem that the larva of a given species is restricted in its food to a particular fungus; on the contrary, some may be discovered attacking fungi indiscriminately, while according to Winnertz, in dry years when the fungi do not grow, even those species which under ordinary circumstances must rely on fungi, are found in rotten trunks of trees. Many of the larvæ are gregarious in their habits. In order to prepare for the next metamorphosis, the majority go under ground, the rest pupate in the spot where they have hitherto resided. When fully grown they may or may not form a cocoon or puparium. Some prepare a more or less rough cocoon, rounded off at both ends, of which one end is broader than the other, and provided with a cap, which is easily pushed off by the perfect insect when ready to emerge; others make a tent-like web with which they invest themselves. Wahlberg, in 1849, published a long account of his observations on the life-history and metamorphoses of *Ceroplatus sesioides*, and he found that both the larvæ and pupæ emitted a phosphorescent light. The cocoons do not shine, but permit the light of the pupæ to pass through them like a paper lantern.

In 1886 Mr. Meyrick communicated a note to the "Entomologists' Monthly Magazine" from Wellington (N.Z.), stating that he had observed a densely shaded creek near Auckland illuminated after dark with great numbers of larvæ, but insufficient opportunity prevented his investigating these creatures. Mr. Hudson, in the October number of this magazine for the same year, recorded further observations on these larvæ from Wellington. He says: "The insect inhabits irregular cavities in the bank, where it hangs suspended in a glutinous web, which also appears to envelope its body, large quantities of sticky mucus being periodically shot out of the mouth and formed into threads as required, but I have never seen anything like a net extended in front of

the insect. . . . At the back of this irregular chamber the larva constructs a small hole, into which it retreats with great rapidity when alarmed," &c., &c. In November (Ent. Mon. Mag. XXIII. p. 133) Osten Sacken, in a short note, asserts that Mr. Hudson's account about the luminous insect-larva from New Zealand leaves him little doubt that it belongs to the Mycetophilidæ. The description of the glutinous web, the rapid motions of the larvæ gliding upon it, and their retreat into holes when alarmed, showed a remarkable agreement with his observations on the larvæ of *Sciophila*, described in detail in his article, "Characters of the Larvæ of Mycetophilidæ," in the Proceedings Entom. Soc. Philad. 1862. He did not remember whether his *Sciophila* were shining or not. Osten Sacken then goes on to mention that Wahlberg had observed luminous larvæ of Mycetophilidæ.

Upon describing to Mr. Masters the habits of the larvæ of *Ceroplatus*, and showing him the above accounts and a plate containing figures of the metamorphoses and life-history of *Ceroplatus tipuloides* (Ann. des Sc. Nat. 2nd Ser. XI.), illustrating a monograph of the genus *Ceroplatus*, by Dufour, he at once remembered having seen larvæ whose habits and form corresponded to those of this genus; but although this is the right time of the year to look for specimens, neither Mr. Masters or myself, probably owing to the dryness of the season, could find any traces of them. The species which I have named *Ceroplatus Mastersi* occurs in the perfect state plentifully in November and December, and odd specimens even up to March.

Réaumur (Mem. p. s. à l'Hist. des Ins. Vol. V.) publishes a long account of his observations on the young stages of a species of Ceroplatus. The paper by Wahlberg containing the account of *Ceroplatus sesioides* is translated in the Stett. Ent. Zeit. 1849, pp. 120-123.

Perris gives some accounts of the life-histories of some species of *Mycetophila* in the early numbers of the "Annales de la

Société Entomologique de France;" and in a later volume (4th ser. Vol. X. p. 146), appears a lengthy contribution on the young stages of *Sciophila striata*, Meig., and the perfect insect.

Winnertz informs us that with all species having more than one generation in a year the pupa-state lasts seldom more than two or three weeks, but with those having only one yearly generation and lasting through the winter, this period lasts longer.

The perfect insects abound about Sydney, principally between the months of August and January inclusive; though stragglers may be caught throughout the year. A few days' rain succeeded by fine warm weather is sure to bring some out. Most if not all the species of which I have been able to obtain examples seem to prefer the shade during the day, beginning to take more extended flights towards the end of the afternoon when the sun is quickly losing power; many may be taken on windows towards evening. Dense bushes, dark gullies strewn with logs, and caves, all seem favourite resorts.

About 800 species of Mycetophilidæ are now known, representatives of many genera have been found almost throughout the world, and it is more than probable that the majority of generic forms will eventually be discovered to have an unlimited distribution. It is likely that most of the genera recorded as common to Europe and America also occur in Australia, and the little investigation to which these insects have been subjected, has conclusively shown that *Macrocera*, *Ceroplatus*, *Platyura*, *Sciophila*, *Leia*, *Trichonta*, and *Mycetophila*, so numerously represented in Europe, are also found here; all these, with I think the single exception of *Trichonta* (which, however, occurs in North America), have in most cases a large number of species in both North and South America; and although in America this group has received not nearly the amount of attention paid to it in Europe, we find from O.-Sacken's "Catalogue of the North American Diptera" published in 1878, that, notwithstanding this disadvantage, the therein recorded species are referable to about three-fourths of the known European genera, and it may reasonably be supposed that some of the old described species will, upon

further examination, be found to more properly occupy some of the numerous genera subsequently established by Winnertz, many of which latter are dismemberments of some of the older divisions, and are based upon characters liable to be overlooked by authors who do not think it worth while to give details of structure a careful and close scrutiny.

Dr. Schiner ("Novara-Expedition," 1868, p. 10) makes a few observations upon the geographical distribution of the group, and estimates the then known number of accepted genera at 48*, the species amounting to 694; in both these totals, however, he includes all those species now placed in the separate family Sciaridæ, while on the other hand he does not include his new genus *Pseudosciara* and five other new species (four of them *Sciara*) enumerated in his pages which follow. Deducting from the above the species attributed to the Sciaridæ, the genera would number 46 and the species about 450; and the only established genera, which up till that time were not known in Europe, were *Cnephæophila*, *Diomonus*, *Platyroptilon* and *Pseudosciara*, all created for American species. Since then (in 1869) Loew added his genus *Eudicrana* from North America, and this, with the above four, are still unknown in Europe or elsewhere out of America. To the European genera accepted by Schiner in 1868 six have since been added. In the present contribution nine new genera are named, but it is difficult to say that they may not have representatives elsewhere. As far as I can ascertain no Mycetophilidæ have been yet recorded from Africa, but no one of course for one moment entertains the thought that they may not occur there; some genera of the Cecidomyidæ and six of *Sciara* are known, which differ very little from the European forms, and possibly many, or may be most, of the generic forms of the Mycetophilidæ prevail there. *Mycetophila*, besides being recorded from Europe, North and South America and Australia, occurs, according to Prof. Hutton, in New Zealand; this author also describes an insect under the generic

* This does not include Loew's four fossil genera.

title *Platyura*, but judging from the note appended to his description the insect is evidently not *Platyura*. The four genera named by Loew, from fossil specimens discovered in amber, it appears are extinct.

Imago.

External structure.

The head is narrower than the thorax, round or oblong, flattened or flattened-hemispherical on the fore part, situated deep in the thorax. Front of both sexes broad. Eyes round or oval, frequently emarginate on the inner side or reniform, set with short hair. Ocelli three or only two; in the former case they are either disposed in a triangle, in a bent or sometimes a straight line on in the front, or two are situated, one at the inner border of each of the compound eyes, and the third placed in the middle of the anterior border of the front; in the other case always at the inner border of the compound eyes. Proboscis short, retired, rarely elongated or beak-shaped. Palpi three- or four-jointed, prominent, generally incurved; the first joint always very small. Antennæ generally arcuated, projecting forwards, straight or diverging sidewards, 2-+10- to 2-+15-jointed; the joints of the scapus distinctly set-off, first one cylindrical or cyathiform, rarely cupuliform, second joint cupuliform or cyathiform, both usually setiferous at the apex; flagellar joints cylindrical, compressed-cylindrical, orbicular, or setiform, with a downy pubescence, seldom verticillate-setose. Thorax ovate, more or less arched; prothorax with short, close pubescence, sometimes with longer hair, frequently this is mingled with setiferous hair; lateral and posterior borders setiferous; metathorax highly arched or perpendicular; scutellum generally small, semi-circular, sometimes large, rounded-triangular, generally setiferous; no transverse suture. Halteres naked or with a minute pubescence. Abdomen six- or seven-segmented, rarely eight-segmented; cylindrical or compressed from the sides, narrower at the base; ♂ with a large or small anal joint and holding forceps; ♀ with an ovipositor provided with two terminal lamellæ; the hair, except in a few cases, short and lying

close. Legs sometimes long and slender, sometimes short and robust. Coxæ very strong and elongated. Femora broadly flattened, usually strong. Tibiæ spurred and with lateral spines, rarely without the latter; fore ones with a spur and a very small spine, or unarmed; hind ones with two spurs and one to four ranges of lateral spines on the outside, and generally with one range on the inner side; rarely are all the tibiæ unarmed. Tarsi long and slender, or short and strong, metatarsus frequently prickly. Wings ovate, longer or shorter than the abdomen, with a broad, rounded, or more or less cuneiformly narrowed base; distinctly haired or only microscopically pubescent; pellucid, more or less tinted with a pale shade of brown, sometimes hyaline, sometimes variegated; iridescent. Five or six longitudinal veins, the fifth generally, and the sixth always, rudimentary; three cross-veins, of which two—the humeral and marginal cross-veins—are always present, the sub-costal cross-vein being frequently missing; third and fourth longitudinal veins almost always, and the second longitudinal sometimes, forked. No discoidal cell. The costal vein, first longitudinal vein, and fourth longitudinal vein are always complete, and form the principal veins which issue from the root. The costal vein either extends quite to the apex of the wing or stops a short distance before it; the first longitudinal vein joins the costa; and the fourth longitudinal vein runs in a more or less long curve to the posterior margin of the wing. From the first longitudinal vein near or at its root branches off, between it and the costa, the auxiliary vein. The auxiliary vein is either long or short, bent upwards and going into the costa, bent downwards and running into the first longitudinal vein, disappearing gradually in its course in the sub-costal cell, or, lastly, forming only a tooth, which may be very short or somewhat lengthened, sometimes inclining downwards, and appearing to lean towards the first longitudinal vein; the auxiliary vein is connected by the humeral cross-vein near its base, with the costa, and frequently it is united to the first longitudinal vein by the sub-costal cross-vein. Second longitudinal vein issuing from the fourth longitudinal vein at or before its middle or near its root;

if it issues from the middle of the fourth longitudinal vein, or a little before its middle, it rises in a more or less oblique manner; when it issues remote from the middle, it is broken in an angle; if it issues from near the root of the fourth longitudinal vein, it rises with a light bend, and then runs in a slightly divergent line from the first longitudinal vein until it arrives almost to the middle of the wing-disk, and then it proceeds, bent upwards, to the marginal cross-vein; from the latter point it continues and joins the costa at or before the apex of the wing; in this latter combination the marginal cross-vein is very small, and is only rarely obliquely situated, and if there is an anterior branch to the second longitudinal vein this is far retired, and always very near the marginal cross-vein. The anterior branch of the fourth longitudinal vein issues rarely near the root of the second longitudinal vein. When the second longitudinal vein issues from the middle of the fourth longitudinal, it is at the base coalescent with the anterior branch of the fourth longitudinal vein, and the third longitudinal vein has its origin a little below, or above, the marginal cross-vein, and its fork lies higher up in the wing-disk; in this arrangement of the veins the second longitudinal vein is rarely simple, but usually sends out an anterior branch which runs into the costa, or into the first longitudinal vein; this branch may be short or long. When the second longitudinal vein issues from the base of the fourth longitudinal vein, the third longitudinal vein issues at the angle before the marginal cross-vein.

Rarely the anterior branch of the fourth longitudinal vein is missing, still more rarely the anterior branch of the third longitudinal vein; infrequently one of these branches is, or both are, detached at the base. Fifth longitudinal generally only rudimentary, sometimes entirely missing, but when complete running into the posterior margin; issuing from the root of the fourth longitudinal vein. Between the fifth longitudinal vein and the fourth longitudinal vein there is a longitudinal fold, beginning at the base of the fifth longitudinal vein and appearing like a vein

under and close to the fourth longitudinal vein, frequently continuing nearly to the wing margin. Sixth longitudinal vein rudimentary or entirely missing.

When the marginal cell is divided by an anterior branch of the second longitudinal vein the fresh cell thus formed is regarded as the first sub-marginal cell; otherwise, the cell between the second and third longitudinal veins (and the anterior branch of the latter) is the first, or perhaps the only, sub-marginal cell. If the anterior branch of the third longitudinal vein be missing, one sub-marginal cell disappears; and should the anterior branch of the fourth longitudinal vein be absent, the second posterior cell is merged into the first and takes its name. In the genera *Trizygia* and *Azana* all three anterior branches are missing, which leaves the wing with only one sub-marginal and one posterior cell; in the case of *Aphelomera* the third longitudinal itself is so detached from the second longitudinal vein as to really make one large posterior cell contained by the second and fourth longitudinal veins.

SECTION I.

Sub-section IV.—MACROCERINÆ.

Genus 6. Macrocera, Meig.

Macrocera, Meigen, Illig. Mag. II. 1803, p. 261; Macquart, S. à B. Dipt. I. 1834, p. 127; Curtis, Brit. Ent. XIV. 1837, p. 637; Stæger, Kr. Tidsskr. 1840, p. 230; Zetterstedt, Dipt. Scand. X. p. 4060; Walker, Ins. Brit. Dipt. III. 1856, p. 69; Winnertz, V. z.-b. G. Wien, XIII. 1863, p. 675; *Geneja*, Lioy, Atti. Ist. Ven. 3ª ser. t. IX, 1864, p. 229.

Head broad, oval, flattened on the fore part. Eyes oval, a little emarginate on the inner side above. Ocelli three, of unequal size, in a triangle on the front, the foremost one smaller. Palpi four-jointed, cylindrical, the first joint small, the following ones of equal length, or the fourth somewhat lengthened. Antennæ 2-+14-jointed, very long, frequently much longer than the body, projecting forwards, arcuated; the first joint of the

scapus spheroidal, the second more cupuliform ; the first flagellar joint cylindrical, the upper ones setiform, pubescent, a little setiferous on the under side ; the last two joints densely covered with longer hair and setæ. Thorax oval, highly arched ; scutellum small, almost semi-circular ; metathorax highly arched. Abdomen flattened, almost cylindrical, in the ♀ broadest in the middle; with seven segments in both sexes. Legs slender, long, the fore ones short; tibiæ spurred, the spurs very small; lateral spines wanting. Wings hairy or only microscopically pubescent, large, broad, with a very broad base ; usually longer than the abdomen ; half open in repose. Auxiliary vein complete, terminating in the costa, and united to the first longitudinal vein by the sub-costal cross-vein ; costal vein extending far beyond the tip of the second longitudinal vein, and almost reaching the apex of the wing ; second longitudinal vein very much arched, forming a long-stalked fork, the anterior branch always very short, lying in a very very oblique position, terminating in the costa ; fifth longitudinal vein more or less undulated.

A. Wings microscopically haired.

a. Wings unspotted.

138. Macrocera delicata, sp.n.

♂.—Length of antennæ.....	0·300 inch ...	7·62 millimètres.
Expanse of wings	0·160 × 0 057 ...	4·06 × 1·44
Size of body.....	0·180 × 0·020 ...	4·56 × 0 50

Antennæ two-fifths longer than the body ; joints of the scapus ochraceous-brown ; all the flagellar joints deep brown, appearing almose cinereous in a certain light. Hypostoma ochraceous-brown. Front and palpi brown. Thorax bright ochraceous-brown inclining to ferruginous, nitidous, with three very narrow, rather indistinct, longitudinal ochraceous lines, the intermediate one disappears about the middle of the thorax, the lateral ones have each a row of black hairs, continue to the scutellum, and do not coalesce ; the space enclosed by the lines gradually deepens into brown towards the collare ; the hairs of the longitudinal rows short until past the

middle of the thorax, becoming setose posteriorly; the lateral margins setose; scutellum with very few hairs. Pleuræ ochraceous-brown, somewhat ferruginous. Halteres yellow at the base of the stem, the remainder smoky-brown; rather densely covered with a minute pubescence. Abdomen very slender, about three times the length of the head and thorax taken together, uniform yellowish-brown approaching light umber, with a rather dense long black pubescence; forceps of the same colour, small, densely haired. Coxæ ochraceous-brown, the fore pair densely setose in front; femora and tibiæ somewhat yellowish-brown; tarsi dusky on account of their dense black pubescence. Wings shorter than the body, almost hyaline, with a greyish tint, veins umber brown; brilliantly iridescent when viewed at a certain obliquity. All veins, except the cross-veins and the fifth longitudinal, ciliated. Auxiliary vein joining the costa before the base of the cross-vein. Extreme tip of the first longitudinal vein somewhat dilated.

Hab.—Middle Harbour (Skuse). September; one specimen under an over-hanging rock.

Obs.—This has much the general appearance of *M. Mastersi* described further on, but can readily be distinguished from it by the absence of the oblique band on the pleuræ, the microscopically haired wings, and the scarcely distended tip of the first longitudinal vein.

b. Wings with brown spots.

139. Macrocera decorosa, sp.n. (Pl. xxxi. fig. 1.)

♂.—Length of antennæ.....	0·420 inch	...	10·66 millimètres.
Expanse of wings.....	0·220 × 0·075	...	5·59 × 1·89
Size of body.....	0·220 × 0·025	...	5·59 × 0·62
♀.—Length of antennæ	0·420 inch	...	10·66 millimètres.
Expanse of wings.....	0·270 × 0·090	...	6·85 × 2·27
Size of body.....	0·270 × 0·040	...	6·85 × 1·01

Antennæ nearly twice the length of the body; joints of the scapus yellowish-brown; flagellar joints pale brown, the base of the first yellowish-brown. Hypostoma yellowish-brown; front

piceous-castaneous, nitidous. Palpi yellowish-brown. Thorax piceous-castaneous, nitidous, with two longitudinal slightly convergent single rows of short brown hairs extending to the scutellum; the lateral margins and scutellum setose; humeri tipped with yellowish; scutellum pitch-brown. Pleuræ piceous-castaneous. Halteres very pale yellowish; the apical half of the club deep brown, with a short fine pubescence. Abdomen twice the length of the head and thorax taken together, narrowed at the base and extremity, in the middle narrower than the thorax; the segments piceous-castaneous, yellowish on the anterior border, the first segment being more than half yellow, the last entirely brown; densely clothed with a long brown pubescence; forceps rather wider than the terminal segment, its last joint short, bidentate, densely pubescent. Legs densely covered with a brown pubescence. Coxæ of the fore-legs yellow, brownish at the apex, densely setose in front; those of the intermediate- and hind-legs with the apical half piceous-castaneous. Femora of the fore- and intermediate-legs ochraceous-brown, the first pair paler than the others; of the hind-legs piceous-castaneous, somewhat ochraceous at the base and towards the apex. Tibiæ and tarsi dusky, almost cinereous-brown. Wings almost hyaline, with three distinct fuscous spots; the first, a narrow irregular nebulous band, stretches obliquely across the wings from below, and a little posterior to, the junction of the first longitudinal vein with the costa to the posterior angle, bordering a yellow patch between the fourth and fifth longitudinal veins, and extending behind it in the posterior angle; a more or less cuneate spot, having its base on the posterior margin, and enveloping the tip of the fifth longitudinal vein, runs obliquely to the anterior branch of the fourth longitudinal at a point opposite to the root of the fork of the third longitudinal vein; the third spot is a broad undulated transverse band near the apex of the wings, just enveloping anteriorly on its inner side the anterior branch of the second longitudinal vein, extending on each side of the tip of the anterior branch of the fourth longitudinal vein on the posterior margin. Besides these markings there is an indistinct longitudinal fuscous

streak before the cross-vein in the inner marginal cell, and the marginal cell is yellow. The auxiliary vein joining the costa almost over, but slightly before, the base of the cross-vein.

♀.—Antennæ about two-fifths longer than the body; all the joints pale brown. Hypostoma pale brown. Palpi pale brown. Thorax varying from piceous-castaneous to almost black, in the former examples two paler longitudinal stripes are more or less distinctly visible; these stripes are broad at the collare, gradually running to a point posteriorly and disappearing entirely, and almost coalescent just before the scutellum; scutellum brownish-ochraceous, sometimes darker, sometimes paler. Abdomen rather longer than in the ♂; lamellæ of the ovipositor yellowish or yellowish-brown. Coxæ of the fore-legs almost imperceptibly tipped with brown. Femora of the hind-legs faded castaneous. The fuscous streak in the inner marginal cell is more distinct than in the ♂, and frequently extends beyond the cross-vein towards the apex of the first oblique band.

Hab.—Elizabeth Bay (Masters and Skuse); Mossman's Bay (Skuse); Lawson, Blue Mountains (Masters); Knapsack Gully, Blue Mountains (Skuse). August to October.

Obs.—I have only seen one ♂ example, which I found fluttering on a window; the ♀ forms have been taken by Mr. Masters and myself in like situations and in caves. Last April I took two small (imperfect) specimens of the ♀ from a spider's web in Mr. Macleay's garden; in these the spots on the wings are darker. They appear to represent a variety of *M. decorosa*, but an examination of better specimens may prove them to belong to a distinct species.

B. Wings distinctly haired.

a. *Wings unspotted.*

140. Macrocera Mastersi, sp.n. (Pl. xxxi. fig. 2).

♂.—Length of antennæ.....	0·320 inch	...	8·12 millimètres.
Expanse of wings.....	0·180 × 0·060	...	4·56 × 1·54
Size of body.....	0·150 × 0·015	...	3·81 × 0·38

♀.—Length of antennæ... ..	0·320 inch	...	8·12 millimètres.
Expanse of wings.....	0·180 × 0·060	...	4·56 × 1·54
Size of body...	0·140 × 0·017	...	3·55 × 0·42

♂ and ♀.—Antennæ about twice the length of the body; joints of the scapus and first joint of the flagellum ochraceous-brown; remaining flagellar joints deep brown, towards the tip of the flagellum appearing almost cinereous in a certain light. Hypostoma light reddish-brown. Front and palpi deep brown. Thorax ochraceous, with three ferruginous longitudinal cuneiform stripes; the lateral ones appear from above to commence about half way between the humeri and the origin of the wings, but they continue over the lateral margins down the pleuræ in a broad deep brown band in an oblique direction to the tip of the intermediate coxæ; the intermediate stripe begins at the collare; all the stripes terminate at the scutellum and do not coalesce; two narrow lines of ochraceous are visible between the stripes, along which are single, rather sparse, rows of very short black hairs; lateral margins sparingly setose; scutellum ochraceous with scarcely any hairs. Halteres yellowish on the stem, the club smoky-brown, the latter with a minute pubescence. Abdomen rather slender, smaller at the base and apex, somewhat more than twice the length of the the head and thorax together, ochraceous-brown, the two last segments (and base of the forceps) black, tinged with pale brown on the posterior margins; densely clothed with long black hairs; forceps rather wider than the terminal abdominal segment, ochraceous-brown; lamellæ of the ♀ ovipositor black. Fore- and hind-coxæ ochraceous-brown, the first pair moderately setose in front; femora and tibiæ somewhat yellowish-brown, the fore femora often paler than the other two pairs; tarsi dusky on account of their dense pubescence. Wings longer than the body, almost hyaline, with a greyish tint, veins umber brown; visibly hairy in all the cells opening on the border of the apical portion; brilliantly iridescent with roseous and smaragdine, in which the latter generally greatly predominates. Nearly all the veins ciliated. Auxiliary vein joining the costa somewhat before the base of the

cross-vein; first longitudinal vein greatly distended at the tip, and for a short distance before it. A yellowish streak appears in the cells on each side of the cross-vein.

Hab.—Knapsack Creek, Blue Mountains (Skuse); Elizabeth Bay (Masters & Skuse). August to October.

Obs.—The description of this species agrees almost exactly with that of the European *M. alpicola* by Winnertz (Beit. zu einer Mon. der Pilzmücken, p. 682, No. 11).

Sub-section V.—CEROPLATINÆ.

Genus 7. Ceroplatus, Bosc.

Ceroplatus, Bosc, Act. Soc. Hist. Nat. de Paris, I. 1792, p. 42; *Platyura*, Meigen, Syst. Beschr. I. 1818; *Ceroplatus*, Macquart, S. à B. Dipt. I. 1834, p. 140; *Platyura*, Walker, Ins. Brit. Dipt. III. 1856; Stæger, Kr. Tidsskr. 1840; *Ceroplatus*, Zetterstedt, Dipt. Scand. IX. 1850, p. 3439; Winnertz, V. z.-b. G. Wien, XIII. 1863, p. 684.

Head small, broadly oval, flattened on the fore part. Eyes oval, sometimes a little emarginate on the inner side above. Ocelli three, in a curved line on the front. Palpi short, not incurved, with three or four joints; first joint small, the others larger. Antennæ projecting forwards, shorter than the head and thorax together, very flat and broad, broadest in the middle, 2-+14-jointed; joints of the scapus catilliform, in some species the first joint prolonged in front; flagellar joints almost annular, the last joint conical or gemmiform. Thorax oval, highly arched; scutellum almost semi-circular; metathorax arched. Abdomen cylindrical or a little flattened, with seven segments in both sexes. Legs long; tibiæ spurred, the spurs of unequal length; lateral spines missing or exceedingly small; one range on the inner side of the fore tibiæ, one on the inner side and two on the outer side of the hind tibiæ. Wings microscopically pubescent, shorter than the abdomen; base broad and rounded off; incumbent in repose. Costal vein extending beyond the tip of

the second longitudinal vein, ending before the apex of the wing; auxiliary vein complete, terminating in the costa before the origin of third longitudinal vein; sub-costal cross-vein missing; second longitudinal vein forming a long-stalked fork with a short anterior branch, the latter sometimes running into the costa, sometimes into the first longitudinal vein; petiole of the third sub-marginal cell always short; fifth longitudinal vein complete.

141. Ceroplatus Mastersi, sp.n. (Pl. xxxi. fig. 3).

♂.—Length of antennæ.....	0·080 inch	...	2·02 millimètres.
Expanse of wings.....	0·180 × 0·070	...	4·56 × 1·77
Size of body.....	0·300 × 0·035	...	7·62 × 0·88
♀.—Length of antennæ.....	0·075 inch	...	1·89 millimètres.
Expanse of wings.....	0·240 × 0·090	...	6·09 × 2·27
Size of body.....	0·330 × 0·060	...	8·37 × 1·54

♂.—Antennæ the length of the thorax, deep brown; first joint of the scapus prolonged anteriorly in an obtuse lobe; both joints of the scapus and first six or seven flagellar joints more or less obscurely tinged with ochraceous or ferruginous-ochraceous, the terminal joint yellow, narrower and longer than the one preceding it, with a minute bud-shaped projection; all the joints densely covered with a minute pubescence and fringed on the upper side with short semi-erect setaceous hairs. Front brown with black hairs, black on the vertex. Eyes non-contiguous, reaching as far as the lateral ocelli. Hypostoma pale yellow, ochraceous brownish-yellow. Palpi yellow, three-jointed, the first two joints small, sparsely covered with short hairs, the third joint longer than the first two combined, elliptical, densely covered with a microscopic pubescence sparsely interspersed with short hairs. Thorax ochraceous-brown, with a short dense black pubescence, setaceous on the lateral margins; almost covered with three deep brown longitudinal stripes, so that little of the ochraceous-brown is visible, the intermediate stripe broader than the others, very broad at the collare, cuneiform, terminating in a point a short distance before

the scutellum, the lateral ones beginning immediately below the humeri, slightly convergent, rather narrower posteriorly, not coalescent, terminating at the scutellum ; pleuræ and metathorax brown or ochraceous-brown, scutellum ochraceous-brown, densely fringed with black setæ. Halteres short, the stem thick, yellow, with a few very short black hairs; the club pyriform, black or very deep brown, with apparently no pubescence. Abdomen somewhat flattened, not quite the width of the thorax, about three times the length ; first segment much narrowed ; ochraceous-brown, the posterior borders of the segments deep brown (this border of brown is generally narrow, but sometimes covers more than half the segment); densely clothed with black hairs; anal joint large and robust, forceps not the width of the terminal abdominal segment, deep brown, densely pubescent, arms narrow, bidentate at the extremity, and armed along the inner side with semi-erect spiniform processes.* Coxæ pale ochraceous with black hairs on the front; tips of the fore and intermediate, and apical half of the hindcoxæ deep brown on the front, also a more or less indistinct brownish spot generally appears in the middle of the front of the intermediate pair. Femora pale ochraceous, the intermediate and hind pairs tipped with deep brown, the latter sometimes with an indistinct longitudinal marking near the base. Tibiæ cinereous, the intermediate and hind pairs deep brown on the tips. Spurs black. Tarsi deep brown, the articulations somewhat lighter. Wings $\frac{3}{5}$ the length of the body, pellucid with a pale greyish-brown tint, darker at the apex ; two brown spots on the anterior border. The first spot somewhat squarish, lying between the costa and base of the third longitudinal vein, not extending laterally quite to the tip of the first longitudinal vein on one side or to the tip of the auxiliary vein on the other side, generally covering a little of the base of the anterior branch of the third longitudinal ; posterior branch of the fork not reaching the margin ; second spot more transverse than

*The number of these spines varies; in four specimens I counted thirteen, eleven, ten and eight respectively.

the first, extending from the anterior branch of the second longitudinal to the tip of the costa, thus entirely filling the first submarginal cell, and reaching posteriorly to the middle of the second submarginal cell. The auxiliary vein joining the costa opposite the base of the marginal cross-vein; anterior branch of the second longitudinal vein joining the costa a little beyond the tip of the first longitudinal; costal extending beyond the tip of the second longitudinal vein $\frac{1}{5}$ of the distance from that to the tip of the anterior branch of the third longitudinal.

♀.—Antennæ about the length of the thorax, the joints deep brown, nearly black (in some specimens with an almost imperceptible tinge of lighter brown on the flanks of the first six or seven flagellar joints), terminal joint and nipple-shaped projection lighter brown than the rest. Thorax brown, sometimes almost black, with little or no indications of the ochraceous brown found in the ♂. Pleuræ and metathorax ochraceous or ochraceous-whitish, irregularly blotched with brown or deep brown; scutellum brown or deep brown. Halteres black, the base of the stem yellow. Abdomen flat, about the width, and two and a half times the length, of the thorax, uniformly black, sometimes with a brownish tinge underneath; lamellæ of the ovipositor black or deep brown. Coxæ ochraceous-whitish or ochraceous, the intermediate pair without brown spots. Wings rather more than $\frac{2}{3}$ the length of the abdomen, dusky at the apex; posterior branch of the fork of the third longitudinal, both branches of the fourth longitudinal, and the fifth longitudinal vein not quite reaching the wing-margin.

Hab.—Elizabeth Bay, near Sydney (Masters and Skuse). September to March.

Genus 8. Heteropterna, gen.nov.

Head large, as wide as the thorax, almost circular from below. Eyes large, oval, entire, very approximate on the face. Ocelli three, in a curved line on the front, the middle one much smaller. Palpi short, very like those of *Ceroplatus*. Antennæ projecting

forwards, shorter than the thorax, very flat and broad, broadest in the middle, 2-+14-jointed; first joint of the scapus cupuliform, the second somewhat shorter and more catilliform; flagellar joints as in *Ceroplatus*. Thorax short, broadly oval, very gibbose, much more so than in *Ceroplatus*; scutellum very small, about one-third the width of the thorax, semi-circular; metathorax highly arched, very steep. Abdomen a little flattened, with seven segments. Legs short; tibiæ spurred, spurs small, those of the hind tibiæ larger than those of the others; tibiæ and tarsi of the hind pair of legs enormously thickened; metatarsus with a distinct range of small spines on the inner side. Wings microscopically pubescent, a little shorter than the abdomen; base very broad and rounded off; incumbent in repose. Costal vein extending beyond the tip of the second longitudinal vein, but not quite as far as the apex of the wing; auxiliary vein complete, terminating in the costa beyond the origin of the third longitudinal vein; sub-costal cross-vein missing; second longitudinal vein forming a long stalked fork with a short anterior branch, the latter running into the costa; petiole of the third sub-marginal cell short; fifth longitudinal vein complete.

Obs.—Having only two specimens of this insect, and those being in a dried state, I cannot examine the palpi with a great degree of satisfaction, but as far as I can judge they seem not to differ essentially from those of *C. Mastersi*.

142. Heteropterna Macleayi, sp.n. (Pl. xxxi., fig. 4.)

♂.—Length of antennæ	0·050 inch	...	1·27 millimètres.
Expanse of wings	0·130 × 0·055	...	3·30 × 1·39
Size of body	0·230 × 0·040	...	5·84 × 1·01

Antennæ not quite the length of the thorax; joints of the scapus brown; flagellar joints bright ochraceous, densely covered with a microscopic pubescence and fringed on the upper side with short semi-erect hairs. Head black. (Pl. xxxi., figs. 4a-b.) Palpi and hypostoma yellow. Thorax deep brown with a large roundish ochraceous spot under each humerus and a small pale ochraceous depression

above the origin of the wings; densely covered with short deep brown hairs; pleuræ deep brown, marmorated with pale ochraceous; scutellum deep brown, fringed with black setaceous hairs. Halteres short, the stem thick, yellow, the club large, pyriform, deep brown almost black; with very little visible pubescence. Abdomen flat, almost the width, and rather more than three times the length, of the thorax; first segment much narrowed; terminal segment narrower than the first, cylindrical; deep brown, the last two segments black; third and fourth dorsal segments bordered anteriorly with pale ochraceous, the fifth with a small pale ochraceous spot on the anterior corners; second, third and fourth segments marmorated underneath with pale ochraceous; forceps about the width of the terminal abdominal segment, cleft at the extremity, the inner arm with a small spur at its inner angle (Pl. xxxi., fig. 4c). Fore coxæ ochraceous, brownish at the base; intermediate and hind pairs deep brown; remaining joints in the fore- and intermediate-legs brownish-ochraceous, in the hind-legs deep brown, except that the basal half of the femora is ochraceous. Tibial spurs of the first two pairs of legs ochraceous-brown, those of the hind pair larger, pale ochraceous. Intermediate and hind coxæ shorter, and the latter more robust than the first pair. In the fore-legs the femora very little longer than the coxæ, the tibiæ about same length as the femora, and the tarsi $1\frac{1}{2}$ times the length of the tibiæ; in the intermediate legs the femora about twice the length of the coxæ, the tibiæ a little longer than the femora, and the tarsi $1\frac{1}{2}$ times the length of the tibiæ; in the hind-legs the femora somewhat more than twice the length of the coxæ, the tibiæ about $\frac{1}{5}$ longer than the femora, greatly swollen towards the apex when they are about as thick as the coxæ, the tarsi about the length of the tibiæ, metatarsal joint very robust, about as thick as the coxæ of the fore-legs, second joint about the thickness of the fore or intermediate tibiæ, the remaining joints more slender, but twice the thickness of the corresponding joints of the other legs (figs. 4d and 4e). Wings not $\frac{2}{3}$ the length of the body, pellucid, with pale greyish-brown tint, darker at the apex; a somewhat indistinct spot in the marginal cell, under the tip of the first longitudinal vein, also a

faint appearance at the tip of the auxiliary vein; beautifully iridescent. Auxiliary vein joining the costa a little beyond the origin of the third longitudinal; first longitudinal vein somewhat dilated at the tip; anterior branch of the second longitudinal vein joining the costa immediately beyond the tip of the first longitudinal; costal extending beyond the tip of the second longitudinal vein nearly half the distance from that to the tip of the anterior branch of the fork; second sub-marginal cell narrow, the posterior branch of the fork not quite reaching the wing margin; fifth longitudinal vein reaching the margin of the wing.

Hab.—Como and Woronora (Skuse). September. In caves.

Obs.—This is the only member of the family in which I have observed a proclivity for spiders' webs. With its legs and wings disposed longitudinally it seems fond of hanging inverted from a single thread, reminding one forcibly of a sleeping bat.

Genus 9. Platyura, Meig.

Platyura, Meigen, Illig. Mag. II. 1803, p. 261; Macquart, S. à B. Dipt. I. 1834, p. 141; Curtis, Brit. Ent. III. 1826, p. 134; Stæger, Kr. Tidsskr. 1840, p. 277; Zetterstedt, Dipt. Scand. X. p. 4078; Walker, Ins. Brit. Dipt. III. 1856, p. 47; Winnertz, V. z.-b. G. Wien, XIII. 1863, p. 675.

Head small, broadly oval, the fore part flattened. Eyes oval, a little emarginate on the inner side above. Ocelli three, of unequal size, near together in a triangle on the broad front, the middle one smaller. Palpi prominent, incurved, four-jointed; the first joint small, second shortened-oval as long or somewhat shorter than the third, the third and fourth joints cylindrical, the fourth the longest. Antennæ as long as the head and thorax together or even longer, rarely shorter; arcuated, projecting forwards, somewhat compressed at the sides or cylindrical, gradually diminishing towards the tip, 2-+14-jointed; joints of the scapus distinctly set-off, the first cyathiform, the second one more cupuliform; flagellar joints compact. Thorax oval, highly arched; scutellum small, almost semi-circular; metathorax arched. Abdomen slender, with seven segments in both sexes; flattened, claviform, in the

♂ somewhat cylindrical at the base, rarely entirely cylindrical, always terminating in a forceps. Legs long; femora somewhat thickened, shorter than the tibiæ; tibiæ spurred; very small lateral spines; one inner and two outer ranges, or the fore-tibiæ without spines, and the hind pair with two ranges of lateral spines which are so small as to be only perceptible with a lens. Wings somewhat broad, base rounded off, as long as the abdomen or a little longer; incumbent in repose; microscopically pubescent. Costal vein extending beyond the tip of the second longitudinal vein, terminating some distance from the apex of the wing; auxiliary vein ending in the costa, rarely broken-off, usually united to the first longitudinal vein by the sub-costal cross-vein; anterior branch of the second longitudinal vein very short, ending either in the first longitudinal vein or in the costa; third sub-marginal cell always with a very short petiole; fifth longitudinal vein complete or incomplete.

B. Anterior branch of the second longitudinal vein running into the costa.

a. *Fifth longitudinal vein reaching the posterior margin.*

143. Platyura magna, Walker.

Platyura magna, Walker, List Dipt. Brit. Mus. 1848, Part I. p. 89. (Div. B. Meig. Dipt. pl. 8, f. 19; Mac. Dipt. i. 142.)

Cinerea, abdomine ferrugineo, segmentorum marginibus posticis fuscis, antennis nigris, pedibus fuscis, femoribus flavis, tibiis apici flavo maculatis, alis subflavis apice cinereis.

Body grey; mouth yellow; eyes black; feelers black, compact, setaceous, slightly compressed, much shorter than the chest; abdomen ferruginous, rather long; hind borders of the segments brown; legs dark brown; thighs yellow; a yellow spot at the tip of each shank; wings slightly tinged with yellow; their tips and the veins brown. Length of the body, 7 lines; of the wings, 11 lines.

"New Holland."

144. Platyura venusta, sp.n.

♀.—Length of antennæ..... 0·070 inch ... 1·77 millimètres.
Expanse of wings..... 0·220 × 0·075 ... 5·58 × 1·89
Size of body..... 0·220 × 0·045 ... 5·58 × 8·13

Antennæ as long as the thorax; joints of the scapus and first two or three flagellar joints ochraceous; remaining flagellar joints dusky brown. Hypostoma, proboscis and palpi deep brown. Front and vertex black. Thorax brown, sub-nitidous, with three broad longitudinal stripes of a darker brown, the lateral ones beginning immediately below the humeri; intermediate stripe with an indistinct median line of very minute black hairs from the collare; the paler lines between the stripes beset with triple rows of short black hairs; the three rows terminating in a dense tuft of long setaceous hair in front of the scutellum; lateral margins, particularly posteriorly, with long setaceous hairs similar to the last; scutellum with a fringe of long black setæ. Halteres brown, with a dense minute pubescence, the base of the stem ochraceous. Abdomen deep brown, the segments indistinctly bordered posteriorly with ochraceous-brown; moderately covered with somewhat long black hairs; lamellæ of the ovipositor deep brown. Coxæ sordid ochraceous, the intermediate and hind pairs tipped with brownish; femora less sordid ochraceous, the intermediate and hind pairs deep brown at the base, extending almost one-third of their length; tibiæ and tarsi dusky brown, almost black. Spurs black. In the fore-legs the tibiæ and metatarsal joint of about equal length. Wings as long as the body, pellucid with a yellow tint, deeper yellow between the second longitudinal vein and the costa; an oblique brown spot from the middle of the marginal cell to the base of the third submarginal, also four brown spots round the apex of the wing, the first and largest descending almost to the anterior branch of the third longitudinal from the tip of the costal and second longitudinal veins, the second in the third submarginal cell, the fourth smaller, immediately below the third longitudinal vein in the first posterior cell, the fourth is larger than the last,

irregular, extending each side of the tip of the anterior branch of the fourth longitudinal vein at the wing margin, the two last spots are inclined to coalesce; a brown line under the fourth longitudinal terminates on the posterior margin in a pale brown spot, which also envelopes the tip of the fifth longitudinal. Costal vein extending beyond the junction with the second longitudinal one-third of the distance from that to the tip of the anterior branch of the third longitudinal; anterior branch of the second longitudinal at an angle of 45°, its base situated at a point one-fourth the distance from the tip of the first longitudinal vein to the tip of the second longitudinal; marginal cross-vein slender at its basal half; rudimentary sixth longitudinal vein wanting.

Hab.—Sydney (Skuse). May.

Var. β.—A ♀ specimen differs from the above in having the coxæ ferruginous-ochraceous, the femora yellowish, the intermediate and hind pairs being marked at the base in the front only, the tibiæ and tarsi not so dark, the tibial spurs not so long and the two middle spots on the apical portion of the wing coalescent, but I cannot detect any deviations that would in my estimation raise it above the rank of a variety.

Hab.—Middle Harbour (Skuse). September.

Obs.—Individuals of this species may vary considerably, only these two have come under my notice.

145. Platyura fenestralis, sp.n. (Pl. xxxi., fig. 5).

♂.—Length of antennæ.....	0·080 inch	...	2·02 millimètres.
Expanse of wings.....	0·150 × 0·055	...	3·81 × 1·39
Size of body.....	0·210 × 0·030	...	5·33 × 0·76
♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·180 × 0·070	...	4·56 × 1·77
Size of body.....	0·230 × 0·047	...	5·84 × 1·23

♂.—Antennæ rather more than one-third the length of the body; in the ♀ about as long as the thorax; joints of the scapus and

base of the first flagellar joint brown; the flagellar joints very deep brown. Hypostoma, proboscis and palpi brown. Front and vertex black. Thorax brown, the humeri ochraceous, in the ♀ pale ochraceous-brown, with three longitudinal rows of short black hairs, the intermediate one is double and stops some distance before the scutellum, the lateral ones are treble, almost reach the scutellum, and terminate in two or three setaceous hairs; lateral margins densely beset, and scutellum fringed, with black setaceous hairs. Halteres ochraceous, the club more or less brownish, with a minute black pubescence. Abdomen brown or ochraceous-brown, the segments more or less bordered with black anteriorly, the black often appears as longitudinal spots on the lateral borders of the dorsal segments, extending half their length, and appearing on the underside as small lateral spots anteriorly; ♂ forceps, ♀ ovipositor and lamellæ, and generally the last two segments rather deep brown. Coxæ and femora pale ochraceous; the intermediate and hind coxæ slightly tipped with brown, their respective femora very indistinctly brownish at the base. Tibiæ and tarsi dusky brown, the latter almost black. Tibial spurs black. In the fore-legs the tibiæ somewhat longer than the metatarsal joint. Wings shorter than the body, pellucid, with a very pale brownish tint, and spotted with brown very similarly to those of *P. venusta*, except that an additional spot occurs under the anterior branch of the second longitudinal vein, the anterior half of the marginal cross-vein is blurred with brown, the spots at the apex coalesce and form an irregular band from the tips of the costal and second longitudinal veins to the anterior branch of the fourth longitudinal, and the line and spot under the fourth longitudinal are scarcely distinguishable; the veins deep brown; all the spots are a paler brown than those of *P. venusta*. Costal vein extending beyond the junction with the second longitudinal, about one-third of the distance from that to the tip of the anterior branch of the third longitudinal vein; remaining venation similar to that of *P. venusta*.

Hab. — Elizabeth Bay (Masters and Skuse). November, December and January. Common in windows.

Obs.—I have also taken one or two specimens of this during the month of May.

146. Platyura Schineri, sp.n.

♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·180 × 0·070	...	4·56 × 1·77
Size of body.....	0·200 × 0·045	...	5·08 × 1·13

Antennæ slightly shorter than the thorax; joints of the scapus brown; flagellar joints black or very deep brown, the last joint with a very small nipple-shaped projection. Hypostoma, proboscis and palpi brown. Front and vertex black. Thorax pale ochraceous with three prominent deep brown stripes, the lateral ones beginning a little below the humeri; all coalescing at the scutellum, separated for the greater part of their length by a narrow line of the pale ochraceous; densely covered with a short black pubescence, setaceous on the lateral margins about the humeri, the origin of the wings, and near the scutellum; scutellum ochraceous, tinged with brownish anteriorly, fringed with black setaceous hairs. Pleuræ and metathorax deep brown almost black. Halteres yellow, stem sparsely covered with very short hairs, club with a microscopic pubescence. Abdomen deep brown, the second to the fifth segment deeply bordered posteriorly with ochraceous, the sixth and seventh segments indistinctly marked with ochraceous; densely clothed with a black pubescence. Coxæ pale ochraceous, the fore pair not setose, densely covered in front with a very short black pubescence, the intermediate and hind pairs more or less pubescent towards the apex; femora dusky-ochraceous on account of their dense pubescence, the intermediate and hind pairs deep brown at the base; tibiæ and tarsi dusky, almost black. Tibial spurs black. In the fore-legs the tibiæ somewhat larger than the metatarsal joint. Wings rather shorter than the body, pellucid, with a greyish tint, somewhat smoky at the tip; veins deep brown. Costal vein extending beyond the junction with the second longitudinal vein nearly one-third of the distance from that to the tip of the anterior branch of the third longitudinal;

posterior branch of the third longitudinal indistinct at its base and not quite reaching the border of the wing; both branches of the fourth longitudinal not quite reaching the posterior border; anterior branch of the second longitudinal at an angle of 45°, its base situated at a point rather more than one-third the distance from the tip of the first longitudinal to the tip of the second longitudinal; auxiliary vein joining the costa a little beyond the tip of the marginal cross-vein.

Hab.—Sydney (Skuse). September.

Obs.—I have only seen a single specimen.

147. PLATYURA CONFORMIS, sp.n.

♀.—Length of antennæ	0·047 inch	...	1·23 millimètres.
Expanse of wings.....	0·150 × 0·045	..	3·81 × 1·13
Size of body.....	0·180 × 0·040	...	4·56 × 1·01

Antennæ shorter than the thorax; joints of the scapus brown; flagellar joints black or very deep brown, last joint with a very small nipple-shaped projection. Hypostoma, proboscis, and palpi brown. Front and vertex black. Thorax black, somewhat ochraceous at the humeri and indistinctly so along the lateral borders, densely covered with a short black pubescence, setaceous on the lateral borders about the humeri, the margin of the wings, and near the scutellum; scutellum black, fringed with black setæ. Pleuræ and metathorax black. Halteres yellow, sparsely fringed with very short hairs on the stem, microscopically pubescent. Abdomen black on the dorsal segments, the second to the fifth segment indistinctly bordered posteriorly with a very narrow band of sordid ochraceous, underneath ochraceous, sometimes ferruginous-ochraceous; lamellæ of the ovipositor deep brown. Coxæ pale ochraceous, the fore pair not setose, densely covered in front with a very short black pubescence, the intermediate and hind pairs more or less pubescent towards the apex; femora dusky ochraceous on account of their dense pubescence, brownish at the base; tibiæ and tarsi dusky, almost black. Tibial spurs black. In

the fore-legs the tibiæ slightly longer than the metatarsal joint. Wings a little shorter than the body, pellucid with a greyish tint, very slightly smoky at the tip, veins deep brown. Costal vein extending beyond the junction with the second longitudinal vein nearly one-third of the distance from that to the tip of the anterior branch of the third longitudinal vein; anterior branch of the second longitudinal vein at an angle of 45°, its base situated at a point rather less than one-third of the distance from the tip of the first longitudinal vein to the tip of the second longitudinal; auxiliary vein joining the costa a little beyond the tip of the marginal cross-vein; posterior branch of the third longitudinal vein indistinct at its base, and not quite reaching the wing-margin; both branches of the fourth longitudinal not quite reaching the posterior margin.

Hab.—Glenbrook (Masters); Sydney (Masters and Skuse). November, December, and January.

Obs.—Although I have a large number of specimens before me, there is not a single ♂ among them. This species is evidently very closely allied to the preceding, but its smaller size and black thorax at once distinguish it.

b. *Fifth longitudinal vein not reaching the posterior margin.*

148. Platyura fulva, sp.n.

♀.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·220 × 0·070	...	5·58 × 1·77
Size of body.....	0·220 × 0·040	...	5·58 × 1·01

Antennæ half the length of the thorax; joints of the scapus fulvous or ferruginous; flagellar joints brown. Hypostoma and front fulvous; vertex black or very deep brown. Palpi brown. Thorax fulvous, densely covered with short black hairs, setaceous on the lateral borders from below the humeri to the scutellum; scutellum fulvous, fringed with black setaceous hairs. Pleuræ and metathorax ochraceous, with some pale fuscous. Halteres ochraceous, the club fulvous, with a minute pubescence. Abdomen about two and a half times the length of the thorax, very

narrow at the base, a little broader than the thorax posteriorly; fulvous, densely clothed with a short black pubescence; ovipositor short, fulvous. Coxæ and tibiæ ochraceous, densely covered in front with very short black hairs; tibiæ and tarsi dusky; the latter almost black. Tibial spurs black. In the fore-legs the meta tarsus somewhat longer than the tibiæ. Wings the length of the body, pellucid, with a pale fulvous tint; veins fulvous, the costal and first, second and fourth longitudinal veins dark. Costal vein extending beyond the junction with the second longitudinal vein about one-third of the distance from that to the tip of the anterior branch of the third longitudinal vein; auxiliary vein reaching the costa opposite to the tip of the marginal cross-vein; anterior branch of the second longitudinal vein at an angle of 45°, its base situated at a point about two-fifths of the distance from the tip of the first longitudinal to the tip of the second longitudinal vein; fifth longitudinal vein very pale, disappearing a short distance from the margin.

Hab.—Sydney (Masters and Skuse). May.

149. Platyura monticola, sp.n.

♂.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·130 × 0·050	...	3·30 × 1·27
Size of body.....	0·130 × 0·020	...	3·30 × 0·50
♀.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings.....	0·130 × 0·050	...	3·30 × 1·27
Size of body.....	0·120 × 0·025	...	3·04 × 0·62

♂.—Antennæ about the length of the thorax; ♀ shorter than the thorax and more slender than in the ♂; joints of the scapus ochraceous-brown, with a few short hairs; flagellar joints dark, their dense minute pubescence with a greyish reflection. Hypostoma brown. Front black. Palpi ochraceous-brown. Thorax fuliginous-brown, almost black in some specimens, levigate, with a somewhat greyish reflection, rather densely covered with tolerably

long black setaceous hairs; the humeri deeply tipped with ochraceous; three longitudinal treble rows of shorter brown hairs may be indistinctly determined running almost parallel to one another to the middle of the thorax, where the intermedial row appears to terminate, the lateral ones not reaching the scutellum and not convergent; under moderate amplification the fuliginous-brown of the thorax resolves itself into three very broad stripes, the lateral ones beginning just below the humeri and separated from the intermediate one by very indistinct ochraceous lines, the latter supporting the lateral rows of short brownish hairs; pleuræ and metathorax deep brown, nearly as dark as the thorax; scutellum brown, more or less tinged with ochraceous, fringed with setaceous hairs. Halteres ochraceous-yellow, with a very minute brown pubescence, the hairs on the stem somewhat longer. Abdomen slender, about three times the length of the thorax, deep brown on the dorsal segments, the two terminal ones generally almost black, somewhat ochraceous-brown underneath; densely clothed with tolerably long black hairs; ♂ forceps densely haired, as wide as the terminal segment. Coxæ ferruginous-ochraceous or ochraceous-yellow; femora and tibiæ brownish-ochraceous, the tibiæ darker than the femora; tarsi dusky brown. Tibial spurs black. In the fore-legs the tibiæ $\frac{1}{4}$ longer than the metatarsal joint. Wings as long as the body in the ♂, rather longer than the body in the ♀, pellucid with a very pale brownish-grey tint; the costal and first, second and fourth longitudinal veins brown, the rest paler brown. Costal vein extending beyond the junction with the second longitudinal vein about two-thirds of the distance from that to the tip of the anterior branch of the fork of the third longitudinal vein; auxiliary vein reaching the costa almost imperceptibly before the tip of the marginal cross-vein; anterior branch of the second longitudinal inclined at an angle of about 45°, its base situated at a point somewhat before, immediately opposite, or slightly beyond the tip of the first longitudinal vein; fork of the third longitudinal rather more than three times the length of the petiole; fifth longitudinal vein disappearing at two-thirds of the distance to the margin.

Hab.—Lawson, Blue Mountains, and Bowral (Masters). January.

Obs.—Mr. Masters tells me that he found this species inhabiting caves in thousands in both the above-mentioned widely separate localities; the caves at Lawson are very damp, and so overshadowed by precipitous rocks, that on the hottest days in January the place is perfectly cool and gloomy, while those at Bowral are situated in a small dry gully altogether exposed to the sun; at the first locality another fly, *Brachydicrania fumosa*, described by me in the present paper, occurs in large numbers, and at first glance appears greatly to resemble the above.

150. Platyura graphica, sp.n. (Pl. xxxi., fig. 6).

♂.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·120 × 0·045	...	3·04 × 1·13
Size of body.....	0·120 × 0·020	...	3·04 × 0·50
♀.—Length of antennæ.....	0·040 inch	...	1·01 millimètres
Expanse of wings.....	0·140 × 0·050	...	3·55 × 1·27
Size of body.....	0·140 × 0·030	...	3·55 × 0·76

♂.—Antennæ as long as the thorax, somewhat shorter in the ♀; joints of the scapus and flagellum deep brown, almost black, the first flagellar joint more than one-half longer than the second. Hypostoma and palpi deep brown. Front and vertex black. Thorax brown, densely covered with a short black pubescence, setaceous on the lateral borders; humeri and collare pale ochraceous; scutellum brown, fringed with setaceous hairs. Pleuræ and metathorax ochraceous, lateral callosity of the metanotum brown. Halteres ochraceous, the club brown, sparingly covered with a minute pubescence. Abdomen deep brown, the segments indistinctly bordered posteriorly with sordid ochraceous, moderately clothed with black hairs; ♂ forceps brown, armed with two pairs of long, slightly bent, aculeiform hooks; ♀ ovipositor short, the lamellæ ochraceous. Coxæ ochraceous, the fore pairs

marked laterally, more or less distinctly, with brown, especially in the ♂; intermediate and hind pairs with an indistinct brownish spot on the front; femora ochraceous; tibiæ and tarsi dusky brown, the tarsi considerably blacker than the tibiæ. Tibial spurs black. In the fore-legs the tibiæ $\frac{1}{4}$ longer than the metatarsus. Wings as long as the body, almost hyaline, marked with a diffuse fuscous-brown reticulation; behind the fourth longitudinal vein there is no reticulation, but an oblique spot extending nearly to the margin; the base of the wing is clear to the marginal cross-vein; a small brown spot occurs at the tip of cross-vein and another at the extremity of the auxiliary vein; clear spaces occur a little before and a little beyond the anterior branch of the second longitudinal vein; a space from the second longitudinal to the anterior branch of the fourth longitudinal, extending laterally from the base of the third sub-marginal cell about half way to the tip of the wing; in the second sub-marginal cell a large roundish space under the extremity of the second longitudinal, and a small one under the tip of the costal; between the third and fourth longitudinal veins and their branches roundish spaces occur on the posterior margin; an oblong space at the bases of the first and second posterior cells, and a square in the middle of the latter reaching the veins anteriorly and posteriorly. Auxiliary vein reaching the margin over the tip of the marginal cross-vein; anterior branch of the second longitudinal vein very little oblique, rather more so in the ♀, its base situated at a point considerably less than one-fourth the distance from the tip of the first longitudinal vein to the tip of the second longitudinal; costal extending beyond the tip of the second longitudinal half way to the tip of the anterior branch of the third longitudinal. Fifth longitudinal very pale and indistinct, almost reaching the margin.

Hab.—Elizabeth Bay (Skuse). December.

Genus 10. Pseudoplatyura, gen.nov.

Head small, broadly ovate, the fore part flattened; vertex somewhat elevated. Eyes long-oval, a little emarginate on the inner side above. Ocelli three, arranged in a triangle on the front, the middle

one smallest. Palpi prominent, incurved, four-jointed; first, second and third joints of almost equal length, but the second just perceptibly longer than the first and somewhat shorter than the third, also thicker and more rounded than the other joints, third joint ovate, fourth joint twice the length of the third, somewhat fusiform. (Pl. xxxi., fig. 7a). Antennæ shorter than the thorax; projecting forwards, arcuated, almost cylindrical, somewhat flattened, 2-+13-jointed; joints of the scapus distinctly set-off, the first cyathiform, the second cupuliform, shorter than the first; flagellar joints compact, the terminal joint short, gemmiform. Thorax longish-oval, highly arched; scutellum small, nearly semi-circular; metathorax arched. Abdomen slender, with seven segments in both sexes; in the ♂ somewhat flattened, a little thicker towards the middle, cylindrical at the base; in the ♀ flattened, claviform. Legs long and slender, the fore pair considerably shorter than the others; femora rather more slender than the coxæ, shorter than the tibiæ; tibiæ spurred; lateral spines extremely small: fore-tibiæ without lateral spines and the spurs small, intermediate tibiæ with one range on the inner and one on the outer side, the spines of the latter widely separated, hind tibiæ apparently with only one range of widely separated spines on the outer side. Wings moderately broad, rounded off at the base, longer than the abdomen, microscopically pubescent. Costal vein extending beyond the tip of the second longitudinal vein; terminating immediately before the apex of the wing; auxiliary vein joining the costa immediately before the tip of the marginal cross-vein; sub-costal cross-vein missing; anterior branch of the second longitudinal vein rather long, issuing from the second longitudinal vein considerably before the tip of the first longitudinal but ending in the costa; anterior branch of the fork of the third longitudinal vein joining the margin immediately below the apex of the wing, consequently very close to the tip of the costal vein; petiole of the third submarginal cell short; fifth longitudinal vein incomplete.

151. Pseudoplatyura dux, sp.n. (Pl. xxxi., fig. 7.)

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·130 × 0·040	...	3·30 × 7·01
Size of body.....	0·150 × 0·020	. .	3·81 × 0·50
♀.—Length of antennæ.....	0·027 inch	...	0·67 millimètre.
Expanse of wings.....	0·135 × 0·045	...	3·42 × 1·13
Size of body.....	0·135 × 0·020	...	3·42 × 0·50

♂ and ♀.—Antennæ slender, shorter than the thorax; joints of the scapus ochraceous-brown, very sparingly pubescent; flagellar joints deep brown or black. Hypostoma and palpi brown. Front and vertex deep brown or nearly black. Thorax brown, with three ill-defined longitudinal double rows of short brown hairs, not coalescent posteriorly; the lateral borders and scutellum with very long setaceous hairs; pleuræ, scutellum and metathorax brown. Halteres brown, the stem ochraceous, sprinkled with very short hairs. Abdomen slender in the ♂, about three times the length of the thorax, shorter and rather more dilated in the ♀; in both sexes the seventh segment small; brown, with the first two segments and venter more or less ochraceous-brown, densely clothed with brown hairs; ♂ forceps deep brown, densely haired, about the width of the terminal abdominal segment; lamellæ of ♀ ovipositor brown. Coxæ and femora ferruginous-ochraceous; tibiæ brown; tarsi dusky brown. Tibial spurs black. In the fore-legs the tibiæ $\frac{1}{3}$ longer than the metatarsus. Wings pellucid, with a greyish tint, not darkened at the apex; brilliantly iridescent; costal and first two longitudinal veins brown, the rest yellowish-brown. Auxiliary vein joining the costa opposite or almost imperceptibly before the tip of the marginal cross-vein; marginal cross-vein pale and rather indistinct; anterior branch of the second longitudinal vein tolerably long and oblique, its base situated as much before the tip of the first longitudinal vein as its tip is beyond; costal vein extending beyond the tip of the second longitudinal vein $\frac{3}{4}$ the distance from that to the tip of anterior

branch of the fork ; fifth longitudinal vein indistinct, not reaching the border.

Hab.—Glenbrook (Masters) ; Sydney (Skuse). November.

Genus 11. Antriadophila, gen.nov.

Head small, broadly oval, the fore part flattened ; vertex somewhat elevated. Mouth parts prolonged. Eyes longish-oval, a little emarginate on the inner side above. Ocelli three, arranged in a triangle on the broad front, the middle one smaller than the rest (except in *A. petulans*, where all three are large and of equal size). Palpi prominent, incurved, four-jointed ; first joint very small, cylindrical, second almost elliptical, thicker than the first and nearly twice the length, third joint sub-cylindrical, not as thick as, and shorter than, the second, fourth joint twice the length of the third and more slender than the first. (Pl. xxxi., fig. 8a). Antennæ generally shorter than the thorax, sometimes as long as the head and thorax together ; projecting forwards, arcuated, very little compressed, 2-+12-jointed ; joints of the scapus distinct, cupuliform, or the first joint cyathiform and the second cupuliform ; flagellar joints compact, the terminal joint long, conical. Thorax longish-oval, arched ; scutellum small, semi-circular ; metathorax arched. Abdomen slender, with seven segments in both sexes, in the ♂ a little flattened, terminating with a forceps ; in the ♀ flattened, claviform, the ovipositor with small terminal lamellæ. Legs long and slender, the first pair shorter than the others ; femora about as thick as the coxæ ; tibiæ spurred, the spurs of the fore-legs, and sometimes also those of intermediate-legs, short ; lateral spines absent,* or very minute and occurring on the intermediate- and hind-legs : the intermediate pair with one range on the outer side, the hind pair with two ranges on the outer side. Wings moderately broad, rounded off at the base, longer than the abdomen, microscopically pubescent. Costal vein extending much beyond the tip of the second longitudinal vein, almost reaching

* I cannot make out any lateral spines on the tibiæ of *A. electilis* and *A. nigricolor*.

the apex of the wing; auxiliary vein joining the costa immediately before the tip of the marginal cross-vein; no sub-costal cross-vein; anterior branch of the second longitudinal vein short, joining the costa, its base situated beyond the tip of the first longitudinal; anterior branch of the third longitudinal joining the margin immediately below the apex of the wing, consequently very close to the tip of the costal vein; petiole about $\frac{1}{3}$ the length of the third sub-marginal cell; fifth longitudinal vein imperfect.

152. Antriadophila nubipennis, sp.n.

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·130 × 0·045	...	3·30 × 1·13
Size of body.....	0·120 × 0·020	...	3·04 × 0·50
♀.—Length of antennæ.....	0·025 inch	...	0·62 millimètre.
Expanse of wings.....	0·140 × 0·050	...	3·55 × 1·27
Size of body.....	0·125 × 0·025	...	3·16 × 0·62

Antennæ slender, shorter than the thorax; joints of the scapus deep pitch-brown; flagellar joints deep dusky brown, rather smaller than those of the flagellum, terminal joint conical, about twice the length of the joint immediately preceding it. Head black. Hypostoma and palpi black or deep brown. Thorax brown, with five longitudinal lines of deep brown, the three middle ones running from the collare to the scutellum, each supporting a double row of short brown hairs; an ochraceous-brown spot occurs before the scutellum, bordered laterally by the medial two lines; the intermediate line not quite reaching the scutellum, stopping at the ochraceous-brown spot; humeri somewhat tipped with sordid ochraceous or ochraceous-brown; sprinkled with short brown hairs between the lateral borders and the medial two lines; lateral borders and scutellum setiferous; pleuræ and metathorax deep brown. Halteres wholly yellow, sprinkled with a few minute hairs. Abdomen twice the length of the thorax, deep brown (in some specimens almost fuliginous), the second, third and fourth segments with a broad band of ochraceous anteriorly, the deep brown appearing in

most specimens as only a narrow border to the hind margin; fifth segment with a slight indication of ochraceous anteriorly in the ♂, almost as distinct as on the other segments in the ♀; the ochraceous markings equally distinct on the underside. Coxæ and femora deep brown, the latter generally more or less tinged in front with ochraceous-brown; tibiæ and tarsi ochraceous-brown; the intermediate and hind tibiæ with minute lateral spines. Tibial spurs black. In the fore-legs the tibiæ $\frac{1}{3}$ longer than the metatarsus. Wings almost hyaline, with pale brownish-grey cloudings, veins brown. A transverse band from the anterior branch of the second longitudinal vein to the tip of the anterior branch of the fourth longitudinal vein, bending forwards at the third sub-marginal cell and continued in a narrow line along each of the branches of the fork; that of the anterior branch meeting half way to the margin a patch between the tip of the second longitudinal vein and the end portion of the anterior branch of the fork; a small, scarcely noticeable spot in the marginal cell against the auxiliary vein about the tip; lastly an irregularly shaped marking in the second posterior cell, starting from the anterior branch of the fourth longitudinal fork opposite to the base of third longitudinal vein, crossing to the posterior branch, extending a little to the other side of it, filling the posterior half of the second posterior cell to the wing-margin, and indistinctly joining the first-mentioned transverse band a little before the margin. Auxiliary joining the costa immediately before the tip of the marginal cross-vein, rather indistinct at the tip; first longitudinal vein reaching the costa immediately before the base of the fork; anterior branch of the second longitudinal vein short, at an angle of about 45°, its base situated at a point about $\frac{1}{3}$ of the distance from the tip of the first longitudinal vein to that of the second longitudinal vein; costal vein extending beyond the tip of the second longitudinal vein $\frac{3}{4}$ the distance from that to the tip of the anterior branch of the fork; fifth longitudinal vein very indistinct, not reaching the margin; a very short and indistinct rudiment of a sixth longitudinal vein.

Hab.—Lawson, Blue Mountains (Masters); Knapsack Gully, Blue Mountains, and Middle Harbour (Skuse). September to January.

153. ANTRIADOPHILA PETULANS, sp.n. (Pl. XXXI., fig. 8).

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·120 × 0·045	...	3·04 × 1·13
Size of body.....	0·120 × 0·020	...	3·04 × 0·50
♀.—Length of antennæ.....	0·025 inch	...	0·62 millimètre.
Expanse of wings.....	0·120 × 0·045	...	3·04 × 1·13
Size of body.....	0·120 × 0·020	...	3·04 × 0·50

♂ and ♀.—Antennæ slender, much shorter than the thorax; joints of the scapus deep brown, not so dark as those of the flagellum; flagellar joints fuliginous, considerably smaller than the joints of the scapus. Front and vertex black. Hypostoma, palpi, and proboscis deep dusky brown. Thorax brown or light brown, with three longitudinal double rows of short black hairs, which become single rows posteriorly, and are not coalescent; in a light brown thorax the space between the longitudinal rows of hairs appears darker, particularly on the anterior half; lateral borders and scutellum setiferous; pleuræ and metathorax brown or deep brown. Halteres wholly yellow, with a sprinkling of minute hairs. Abdomen rather more than twice the length of the thorax, brown or deep brown, the last two segments frequently black or nearly black, densely clothed with black or deep brown hairs; in the ♂ not as wide as the thorax, forceps small; in the ♀ wider than the thorax, the terminal lamellæ brown. Coxæ, femora, and tibiæ ochraceous or brownish-ochraceous, the fore coxæ sometimes brown on the front; tarsi dusky brown. Tibial spurs black; the intermediate and hind tibiæ with minute lateral spines. In the fore-legs the tibiæ about $\frac{1}{3}$ longer than the metatarsal joint (3:2). Wings pellucid with a very pale greyish-brown tint, perceptibly darker at the apex and on the posterior border about the branches of the fourth longitudinal; brilliantly iridescent; veins brown, the costal and first two longitudinal

veins very dark. Auxiliary vein very pale, reaching the costa slightly before the tip of the marginal cross-vein; first longitudinal vein reaching the costa a short distance beyond the base of the fork; anterior branch of the second longitudinal vein pale brown, at an inclination less than 45°, joining the costa at a point about $\frac{1}{4}$ of the distance from the tip of the first longitudinal vein to that of the second longitudinal vein; costal vein extending beyond the tip of the second longitudinal vein about $\frac{4}{5}$ of the distance from that to the tip of the anterior branch of the fork.

Hab.—Mossman's Bay, near Sydney; Woronora (Skuse). September and October.

Obs.—At the first-named locality I found this species represented in great numbers in some caves not far from the sea-shore; at Woronora I took only a single specimen.

154. ANTRIADOPHILA ELECTILIS, sp.n.

♂ —Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·100 × 0·035	...	2·54 × 0·88
Size of body.....	0·100 × 0·015	...	2·54 × 0·38

Antennæ slender, about the length of the thorax; joints of the scapus deep brown, appearing very little lighter than the flagellar joints, the latter sooty-brown, nearly the same size as the joints of the scapus. Head black. Hypostoma, palpi and proboscis sooty-brown. Thorax black, levigate, with three longitudinal double rows of short black hairs; humeri very slightly tinged with brownish-ochraceous; lateral borders and scutellum setiferous; pleuræ, scutellum and metathorax black. Halteres wholly yellow, with very little visible pubescence. Abdomen rather more than twice the length, and about the width, of the thorax, black, densely covered with short hairs; underneath greyish-ochraceous; forceps small. Coxæ and femora brownish-ochraceous; tibiæ dusky ochraceous; tarsi fuliginous. Tibial spurs black; lateral spines missing (or exceedingly microscopic). In the fore-legs the tibiæ $\frac{1}{3}$ longer than the metatarsal joint (3:2). Wings pellucid,

with a very pale greyish-brown tint, brilliantly iridescent; costal and first two longitudinal veins deep brown. Auxiliary vein very pale, joining the costa immediately before the tip of the marginal cross-vein; first longitudinal vein reaching the costa almost imperceptibly before the base of the fork; anterior branch of the second longitudinal vein paler than the second longitudinal, at an inclination of 45°, joining the costa at a point about $\frac{1}{3}$ of the distance from the tip of the first longitudinal vein to that of the second longitudinal vein; costal vein extending beyond the tip of the second longitudinal vein about $\frac{2}{3}$ of the distance from that to the tip of anterior branch of the fork.

Hab.—Elizabeth Bay, near Sydney (Skuse). September.

Obs.—The type is the only specimen I have seen.

155. Antriadophila nigra, sp.n.

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·080 × 0·030	...	2·02 × 0·76
Size of body.....	0·080 × 0·012	...	2.02 × 0.30

Antennæ slender, as long as the head and thorax combined; deep brown, the joints of the scapus somewhat lighter than those of the flagellum; flagellar joints equal in size to those of the scapus, the terminal joint longer than the rest, conical. Head, hypostoma and palpi black. Thorax black, levigate, with three longitudinal double rows of short black hairs, not coalescent posteriorly; lateral borders and scutellum setiferous; pleuræ, scutellum and metathorax black. Halteres wholly yellow, with a few scattered minute hairs. Abdomen nearly three times the length of the thorax, black, densely clothed with short black hair; forceps small. Coxæ and femora pale ochraceous; tibiæ ochraceous, darker than the coxæ or femora; tarsi dusky brown; tibial spurs of the fore- and intermediate-legs short; lateral spines missing (or extremely microscopic). Wings pellucid with a very pale greyish-brown tint; veins greyish-brown. Auxiliary vein pale, almost invisible just before reaching the costa, joining a little before the tip of the

marginal cross-vein; first longitudinal vein reaching the costa opposite to the base of the third submarginal cell; anterior branch of the second longitudinal vein pale, at an inclination of about 45°, its tip joining the costa at a point about $\frac{1}{3}$ of the distance from the tip of the first longitudinal vein to the tip of the second longitudinal; costal vein extending beyond the tip of the second longitudinal vein about $\frac{2}{3}$ of the distance from that to the tip of the anterior branch of the fork.

Hab.—Knapsack Gully (Skuse). October.

SECTION II.

Sub-section VI.—SCIOPHILINÆ.

Genus 13. Sciophila, Meig.

Sciophila, Meigen, Syst. Beschr. I. 1818, p. 245; Macquart, S. à B. Dipl. I. 1834, p. 136; Curtis, Brit. Ent. XIV. 1837, p. 641; Staeger, Kr. Tidsskr. 1840, p. 270; Zetterstedt, Dipt. Scand. XI. p. 4101; Walker, Ins. Brit. Dipt. III. 1856, p. 36; W. z.-b. G. Wien, XIII. 1863, p. 707.

Head small, flattened on the fore part, sitting deep in the thorax, of rounded oval shape owing to its high vertex. Eyes remote in both sexes, oval, a little emarginate on the inner side above. Ocelli three, arranged near one another in a triangle on the broad front, the anterior one very small. Proboscis very short, not prominent. Hypostoma more or less broad. Palpi prominent, incurved, four-jointed, the first joint very small, the second shorter than the third, the fourth as long or longer than all three together, seldom shorter than them. Antennæ projecting forwards, arcuated, those of the ♂ always longer than those of the ♀, in the latter often only as long as the head and thorax together, somewhat compressed, 2-+14-jointed; joints of the scapus distinct, cyathiform, setose at the apex; flagellar joints cylindrical, with downy pubescence. Thorax highly arched, oval; scutellum small, semi-circular; metathorax acclivous. Halteres with an oblong club. Abdomen slender, with seven

segments, narrowed at the base, generally claviform especially in the ♂, somewhat flattened posteriorly; in the male terminating in a short forceps, in the ♀ in a short non-projecting ovipositor with two terminal lamellæ. Legs long; femora with a fringe of hair on the under side; tibiæ spurred, the fore pair with two, the hind pair with three ranges of lateral spines, of which those on the inner side are particularly short and delicate; coxæ elongated, the fore pair hairy on the front, the intermediate pair only at their apex, the hind pair with a range of setaceous hairs on the outer side; in the ♂ of some species the apex of the intermediate coxæ on the inner side has a long arcuated spine, these spines terminate in a double hook-shaped curved point, usually of a dark colour. Wings microscopically pubescent, longish-oval, with rounded off base, a little longer than the abdomen. Tip of the costal vein uniting with the tip of the second longitudinal vein at the apex of the wing, rarely before it; auxiliary vein terminating in the costa not beyond the anterior branch of the second longitudinal vein; base of the second posterior cell lying either before, under or beyond the origin of the third longitudinal vein, but always before the base of the third submarginal cell, and never so far forward as to come under the anterior branch of the second longitudinal vein; fifth longitudinal vein incomplete, usually broken off opposite the middle of the second posterior cell, sometimes disappearing before the base of the second posterior cell.

156. Sciophila par, Walker.

Sciophila par, Walker, Insecta Saundersiana, Vol. I. Diptera, 1856, p. 417. (Div. a. bbbb. Ins. Brit. Dipt. III. 36).

"♂.—*Fusca; antennæ nigræ, basi testaceæ; thoracis fasciæ duæ, latera pectusque testacea; abdominis segmenta marginibus posticis apiceque testaceis; pedes testacei, tibiis obscurioribus, tarsis nigricantibus; alæ subhyalinæ apice sub-cinereæ, areola cubitali 1a et venæ sub-apicalis furca infuscatis, venis nigris; halteres testacei.*

"Brown. Palpi, two stripes on the thorax, sides, pectus, tip of the abdomen and hind borders of the segments testaceous.

Antennæ black, testaceous at the base. Tibiæ dark testaceous; tarsi blackish. Wings nearly hyaline, greyish at the tips; first cubital areolet and fork of the sub-apical vein clouded with brown; sub-costal veinlet opposite the middle of the first cubital areolet, which is of moderate size and about twice longer than broad; veins black. Halteres testaceous. Length of the body 2 lines; of the wings 4 lines.

"Van Diemen's Land."

Genus 17. Homaspis, gen.nov.

Head small, roundish, flattened on the fore part, situated deep in the thorax; front broad. Eyes ovate, a little emarginate on the inner side above. Ocelli three arranged in a curved line on the front, the middle one very small. Palpi prominent, incurved, four-jointed, first and second joints small, of about equal thickness and length, third joint almost cylindrical, more slender than the first and second, almost as long as these two joints taken together, fourth joint cylindrical, very slender, longer than the three first taken together (Pl. xxxi., fig. 9a). Antennæ projecting forwards, longer than the head and thorax taken together, 2-+14-jointed; joints of the scapus distinctly set-off, cupuliform, not setiferous at the apex; flagellar joints cylindrical, with a downy pubescence. Thorax oval, highly arched; scutellum small, almost semi-circular; metathorax steep. Abdomen long, with seven segments, in the ♂ cylindrical, with a moderate anal joint and small forceps. Legs slender* hind tibiæ spurred, and with a few very small spines along the outer side. Wings oblong-oval, moderately rounded at the base, longer than the abdomen, microscopically pubescent. Auxiliary vein complete, joining the costa immediately before the apex of the marginal cell, and at a point about one-third of the distance from the base of the wing to the tip of the costa; costal

*In the only specimen I have seen the tibiæ and tarsi of the intermediate and hind pairs of legs are unfortunately lost.

vein extending a little beyond the tip of the second longitudinal vein, and not reaching the apex of the wing; inner marginal cell short, much widened towards the apex, the apex situated midway between the sub-costal cross-vein and marginal cross-vein; marginal cell very small, almost equilateral, its base (the marginal cross-vein) situated immediately beyond the base of the second sub-marginal cell; the second sub-marginal cell almost sessile, the petiole extremely short; both branches of the fork bending posteriorly towards their tip; second posterior cell very small, its base situated a little before the middle of the second sub-marginal cell; fifth longitudinal vein incomplete, not reaching as far as the base of the second posterior cell.

157. Homaspis meridiana, sp.n. (Pl. xxxi., fig. 9).

♂.—Length of antennæ..... 0·090 inch ... 2·27 millimètres.
Expanse of wings..... 0·150 × 0·045 ... 3·81 × 1·13
Size of body..... 0·150 × 0·020 ... 3·81 × 0·50

Antennæ slender, considerably longer than the head and thorax combined; joints of the scapus ochraceous-brown; flagellar joints 3 to 4 times longer than broad, deep umber brown, densely covered with a very short pubescence with a greyish reflection. Front and vertex black or deep brown, with short golden yellow hairs. Hypostoma and palpi deep brown. Thorax dull deep brown inclining to umber, densely covered with short golden yellow hairs, setiferous on the lateral borders and scutellum; pleuræ, metathorax and scutellum deep brown. Halteres rather long, slender, densely covered with a minute pale pubescence; stem yellow, club deep brown. Abdomen slender, more than twice the length of the thorax, deep castaneous brown, rather densely clothed with moderately long golden yellow hairs; forceps as wide as the terminal segment, deep brown, densely haired (Pl. xxxi., fig. 9b). Fore coxæ ochraceous; intermediate and hind coxæ deep brown, the intermediate pair slightly ochraceous at the apex, with yellow hairs; femora, tibiæ and tarsi (these joints of the

fore legs are missing in the only two specimens I have) brownish-ochraceous, the tibiæ and tarsi darker than the femora. Wings somewhat longer than the abdomen, pellucid, with a greyish tint, and the following indistinct pale brownish-grey markings: the apex entirely clouded from the tip of the posterior branch of the third longitudinal vein; immediately behind the latter is an arcuated fascia; at about an equal distance behind this is another similar but less distict band, apparently obsolete between the anterior branch of the fourth longitudinal vein and the posterior branch of the third longitudinal vein; lastly two small more or less oblong patches occur one above the other at a similar distance behind the last band, the first reaches from the first to the third longitudinal vein, enveloping the small marginal cell, the other is on the posterior margin of the wing, bordered anteriorly by the extremity of the rudimentary fifth longitudinal vein; veins brown. Auxiliary vein joining the costa opposite the apex of the marginal cell; sub-costal cross-vein situated opposite the origin of the third longitudinal vein; first longitudinal vein reaching the costa a short distance before the tip of the posterior branch of the third longitudinal vein; marginal cross-vein situated opposite the base of the fork, and much before the middle of the first longitudinal vein; costal vein extending beyond the tip of the second longitudinal vein about $\frac{1}{5}$ the distance from that to the tip of the anterior branch of the third longitudinal; fifth longitudinal vein distinct, stopping a short distance from the margin of the wing; no sixth longitudinal vein.

Hab.—Gawler, South Australia.

Obs.—The above description was taken from two imperfect specimens of the ♂, the only members entirely absent in both being the fore-legs; however, the shape, covering and venation of the wings, and the structure of the palpi present entirely satisfactory distinctive characters, and the species deserves to be considered as a separate genus, whose nearest affinity appears to be *Lasiosoma*, Winn., on the one hand, and *Polyplepta*, Winn., on the other.

Genus 29. Acrodicrania, gen.nov.

Head ovate, fore part flattened, situated deep in the thorax; front broad, the anterior margin produced in a small triangle reaching to the basal joints of the antennæ. Eyes oval. Ocelli three, of unequal size, arranged in a line on the front. Palpi prominent, incurved, four-jointed; first and second joints robust, short, the second about twice the length of the first, third joint much more slender and a little longer than the second, fourth joint very slender, not the length of the second and third taken together (Pl. xxxii., fig. 10a). Antennæ cylindrical, projecting forwards, arcuated, about as long or somewhat longer than the thorax, 2-+14-jointed; first joint of the scapus cyathiform, about twice the length of the second, the latter cupuliform, both with short setaceous hairs at the apex, the second joint generally with one strong seta; flagellar joints cylindrical, with very short downy pubescence. Thorax ovate, highly arched; scutellum nearly as wide as the thorax, too flattened to be semi-circular; metathorax highly arched. Abdomen rather robust, with eight segments, the eighth segment very short and generally hidden by the seventh; in the ♂ flattened, claviform, with a moderate anal joint and forceps; in the ♀ robust, flattened, terminating in a short ovipositor provided with two small terminal lamellæ. Legs strong; femora broadly flattened; tibiæ spurred, and having strong lateral spines on the intermediate and hind pairs; fore tibiæ with a range of minute spines on the outer and inner side, the spines on the latter widely separated and few; intermediate tibiæ with three ranges on the outer side and one on the inner side; hind pair with two ranges on the outer side. Wings longer than the abdomen, moderately broad, with rounded-off base; microscopically pubescent. Auxiliary vein joining the costa almost over or somewhat before the origin of the third longitudinal vein, united to the first longitudinal vein by a sub-costal cross-vein; costal vein extending much beyond the tip of the second longitudinal vein, but considerably distant from the apex of the wing; first longitudinal vein

united to the second longitudinal by the marginal cross-vein about opposite the middle of the wing; fork of the third longitudinal vein about twice the length of its petiole, very cuneiform, the tip of the anterior branch joining the margin at a point as much above the apex of the wing as that of the posterior branch is below it; anterior branch of the fourth longitudinal vein detached at the base; base of the second posterior cell situated a little before the origin of the third longitudinal vein; fifth longitudinal vein incomplete.

158. Acrodicrania atricauda, sp.n. (Pl. xxxii., fig. 10).

♂.—Length of antennæ.....	0·065 inch	...	1·66 millimètres.
Expanse of wings.....	0·130 × 0·045	...	3·30 × 1·13
Size of body.	0·120 × 0·025	...	3·04 × 0·62
♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·150 × 0·050	...	3·81 × 1·27
Size of body.....	0·145 × 0·035	...	3·67 × 0·88

♂ and ♀.—Antennæ slender; in the ♂ longer, in the ♀ shorter, than the thorax; joints of the scapus ochraceous; flagellar joints fulvous, sometimes fuliginous, the first two or three generally more or less ochraceous, their pubescence with a grey reflection. Head ochraceous-brown, vertex brown or deep brown. Hypostoma ochraceous; palpi pale ochraceous. Thorax ochraceous, almost covered by three broad longitudinal stripes (in some specimens these stripes are ochraceous-brown and little darker than the rest of the thorax, in others they are very deep brown), the intermediate stripe extending from the collare to the scutellum, the lateral ones beginning below the humeri, reaching the scutellum but not coalescent with the intermediate stripe; densely covered with short brown hairs; humeri, lateral borders and scutellum setiferous, those on the latter very long and strong; pleuræ and metathorax in the ♂ deep brown, somewhat tinged with ochraceous, in the ♀ ochraceous; scutellum ochraceous or ochraceous-brown. Halteres pale ochraceous, the apex of the club somewhat infuscated; apparently no pubescence. Abdomen

in the ♂ nearly as wide as, and about one-third longer than, the thorax, somewhat flattened; the first segment, anterior half of the second, the anterior borders of the third and fourth segments slightly, and beneath the first four segments, ochraceous; posterior half of the second, and the two following segments deep brown; fifth and sixth segments wholly black; forceps brown; in the ♀ as wide as, and nearly twice the length of, the thorax, somewhat flattened; dorsal segments sordid ochraceous, indistinctly bordered posteriorly with brown, beneath sordid ochraceous; lamellæ of the ovipositor ochraceous; ♂ and ♀ densely pubescent. Coxæ, femora ochraceous; tibiæ with their spurs somewhat smoky-ochraceous; tarsi and tibial spines almost fuliginous in a certain light. In the fore-legs the tibiæ about ⅓ longer than the metatarsus (3:2). Wings considerably longer than the abdomen, pellucid, with a pale brownish-grey tint, somewhat smoky at the apex; veins brown, the costal and first and second longitudinal veins much darker than the rest; margaritaceous reflections. Auxiliary vein joining the costa somewhat before the origin of the third longitudinal vein; first longitudinal vein reaching the costa a little beyond the base of the fork; marginal cross-vein very short, thick, situated not far from the tip of the first longitudinal vein and immediately before the base of the fork; costal vein extending beyond the tip of the second longitudinal vein ⅔ the distance from that to the tip of the anterior branch of the fork; tip of the anterior branch of the fork situated as much above the apex of the wing as that of the posterior branch is below it; fifth longitudinal vein indistinct, extending rather more than half-way to the margin, its basal portion scarcely visible; a very short stump of a sixth longitudinal vein.

Hab.—Sydney (Masters and Skuse). August.

159. Acrodicrania setosicauda, sp.n.

♂.—Length of antennæ.....	0·065 inch	...	1·66 millimètres.
Expanse of wings.....	0·120 × 0·045	...	3·04 × 1·13
Size of body.....	0·100 × 0·025	...	2·54 × 0·62

Antennæ somewhat more slender than in *atricauda*, longer than the thorax; joints of the scapus and first four or five flagellar joints reddish-ochraceous, remainder of flagellar joints brown, their pubescence with a grey reflection. Front and vertex ochraceous, the lateral ocelli surrounded by black. Hypostoma and palpi greyish-ochraceous. Thorax dull brownish-ochraceous, with traces of three brown longitudinal stripes, the lateral ones reach the scutellum and are very distinct; densely covered with short brownish-yellow hairs, the lateral margins and scutellum with long brown setæ; pleuræ and metathorax deep brown; scutellum dull ochraceous, more or less tinged with brown. Halteres yellow, with apparently no pubescence. Abdomen wider than, and about twice the length of, the thorax, considerably flattened, dull ochraceous, the second to the fifth segment with two large deep brown spots, meeting and forming a broad band in the fourth and fifth segments in most specimens; posterior margin of the first segment slightly marked with brown; beneath dull ochraceous, the last two or three segments indistinctly marked with brownish; anal joint setiferous, ochraceous, forceps ochraceous. Coxæ, femora and tibiæ greyish-ochraceous; tarsi and tibial spurs smoky ochraceous; tibial spines almost fuliginous; the fore tibiæ and the hind femora and tibiæ slightly tipped with brown. In the fore-legs the tibiæ $\frac{1}{4}$ longer than metatarsus; the tarsi about twice the length of the tibiæ. Wings much longer than the abdomen, pellucid, with a pale brownish-grey tint; a more or less triangular brown spot, having its base in the second longitudinal vein a short distance from the tip and its apex on the anterior branch of the fork at an equally short distance from the base; a more or less distinct pale brown marking at the base of the first sub-marginal cell and an irregular streak under the fourth longitudinal vein, beginning under the base of the anterior branch and extending more than half-way to the margin of the wing; the costal and first two longitudinal veins brown, the rest pale brownish-yellow. Auxiliary vein joining the costa almost imperceptibly before the origin of the third longitudinal vein; first longitudinal vein reaching the costa opposite or almost imperceptibly

before the base of the fork; marginal cross-vein very short, rather indistinct, situated not far from the tip of the first longitudinal vein; costal vein extending beyond the tip of the second longitudinal vein about $\frac{1}{2}$ the distance from that to the tip of the anterior branch of the fork; tip of the anterior branch of the fork situated as much above the apex of the wing as that of the posterior branch is below it; rudimentary fifth and sixth longitudinal vein as in *atricauda*.

Hab.—Sydney (Masters). November (?).

160. Acrodicrania fasciata, sp.n.

♀.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings.....	0·120 × 0·045	...	3·04 × 1·13
Size of body.....	0·115 × 0·030	...	2·92 × 0·76

Antennæ slender, rather shorter than the thorax; joints of the scapus and first five or six flagellar joints ochraceous, remainder of flagellar joints black; pubescence with a grey reflection. Front, vertex, hypostoma and palpi ochraceous. Thorax dull brownish-ochraceous with three indistinct brown longitudinal stripes, the intermediate stripe very indistinct, partly visible just before the middle of the thorax, the lateral ones starting much below the humeri, terminating at the scutellum; densely covered with short brownish-yellow hairs, the humeri, lateral margins and scutellum setiferous; pleuræ ochraceous; metathorax deep brown; scutellum ochraceous-brown. Halteres wholly yellow, with apparently no pubescence. Abdomen about as wide as, and $\frac{1}{3}$ longer than, the thorax, somewhat flattened; deep brown almost black, the first segment ochraceous; densely clothed with short brown pubescence; lamellæ of the ovipositor deep brown. Coxæ and femora greyish-ochraceous; tibiæ with their spurs ochraceous-brown; tarsi smoky ochraceous; hind femora deep brown at the apex; tibial spines fuliginous. In the fore-legs the tibiæ about $\frac{1}{6}$ longer than the metatarsus; the tarsi rather more than twice the length of the tibiæ. Wings much longer than the abdomen,

pellucid, with a pale greyish-brown tint; a fuscous transverse band, very pale posteriorly, near the tip of the wing, starting from the costal margin mid-way between the tips of the first and second longitudinal veins, and on the posterior margin enveloping the tip of the anterior branch of the fourth longitudinal vein; a pale streak under the fourth longitudinal vein opposite to the tip of the rudimentary fifth longitudinal vein; veins brown, very distinct, except the tips of branches of the fork of the third longitudinal. Auxiliary vein joining the costa immediately before the origin of the third longitudinal vein; first longitudinal vein reaching the costa opposite the base of the fork; marginal cross-vein very short, situated not far from the tip of the first longitudinal vein; costal vein extending beyond the tip of the second longitudinal vein $\frac{2}{3}$ the distance from that to the tip of the anterior branch of the fork; tips of the fork very pale, almost invisible before reaching the margin, that of the anterior branch situated as much above the apex of the wing as that of the posterior branch is below it; rudimentary fifth and sixth longituinal veins as in the two preceding species.

Hab.—Sydney (Skuse). January and December.

Genus 30. Leia, Meig.

Leia, Meigen, Syst. Beschr. I. 1818, p. 253; Macquart, S. à B. Dipt. I. 1834, p. 135; Curtis, Brit. Ent. XIV. 1837, p. 645; Stæger, Kr. Tidsskr. 1840, p. 232; Zetterstedt, Dipt. Scand. XI. p. 4140; Walker, Ins. Brit. Dipt. III. 1856, p. 27; Winnertz, V. z.-b. G. Wien, XIII. 1863, p. 792.

Head ovate owing to the high vertex; flattened on the fore part, situated deep in the thorax. Eyes oval. Ocelli three, arranged in a triangle on the upper part of the broad front, almost situated on the vertex, the middle one smaller than the other two. Palpi prominent, incurved, four-jointed, the first joint small, the next two almost of equal size, the fourth as long or longer than all three together. Antennæ cylindrical, projecting forwards, somewhat arcuated, 2-+14-jointed; joints of the

scapus cyathiform, the second one setiferous at the apex; flagellar joints cylindrical, with very short pubescence. Thorax ovate, highly arched; scutellum small, almost semi-circular; metathorax high, acclivous. Abdomen slender, with six segments; in the ♂ almost cylindrical, narrowing posteriorly, with a shortened anal joint and small forceps; in the ♀ little flattened, ending in a thick ovipositor, which has two small lamellæ at its apex. Legs strong; femora, particularly the hind pair, broadly compressed; tibiæ spurred and with lateral spines, the fore pair have on their outer side a range of short spines, and a single prickle on the inner side a little above the middle, on the outer side near the range, a little below the middle, and on the apex near the spurs, these separate spines not stronger than the others; hind tibiæ towards their outer side with three ranges of very strong spines, and the intermediate pair with a single spine, which is longer than all the others, on their inner side a little above the middle. Wings longer than the abdomen, longish-oval, rounded off at the base; microscopically pubescent. Auxiliary vein reaching to about one-third of the anterior border, and not united by a sub-costal cross-vein to the first longitudinal vein; costal vein extending a great deal beyond the tip of the second longitudinal vein, but not as far as the apex of the wing; first longitudinal vein, which terminates in the costa a little beyond the middle of the anterior border, united to the second longitudinal vein by the marginal cross-vein almost opposite the middle of the wing-disk, consequently the inner marginal cell is almost half the length of the wing; third longitudinal vein bent upwards a little, reaching the margin immediately below the apex of the wing; anterior branch of the third and fourth longitudinal veins detached at the base, the former ending in the margin between the tip of the costal vein and the apex of the wing; base of the second posterior cell situated much before the origin of the third longitudinal vein; fifth longitudinal vein present only as a rudimentary root.

161. Leia fulva, Walk.

Leia fulva, Walker, Insecta Saundersiana, Vol. I. Diptera, 1856, p. 416. (Div. B. Meig. Dipt. I. p. 255; Sub-div. b. pl. 9, f. 18).

"♀.—*Fulva, robusta, subtus testacea; abdominis segmenta fasciis nonnunquam interruptis nigris; pedes testacei, tarsis fuscescentibus; alæ subcinereæ apice obscuriores, venis nigris basi testaceis.*

"Tawny, stout, testaceous beneath. Abdominal segments with black bands, which are sometimes interrupted. Legs testaceous; tarsi brownish. Wings slightly greyish, rather darker at the tips; veins black, testaceous at the base. Length of the body 1½ lines; of the wings, 3 lines.

"Van Diemen's Land."

Genus 31. Ateleia, gen.nov.

Head small, broadly ovate, nearly round, somewhat compressed on the fore part, situated deep in the thorax. Eyes ovate, entire. Ocelli three, arranged in a triangle on the front. Palpi prominent, incurved, four-jointed; first and second joints small, moderately robust, the second somewhat longer than the first, third joint more slender than the second and about one-third longer than the latter, fourth joint slender, about the length of the second and third taken together (Plate xxxii., fig. 11a). Antennæ cylindrical, tapering towards the apex, projecting forwards, arcuated, 2-+14-jointed; first joint of the scapus cyathiform, the second cupuliform, setiferous at the apex; flagellar joints cylindrical, with a very short downy pubescence. Thorax ovate, highly arched; scutellum small, almost semi-circular; matathorax high, acclivous. Abdomen in the ♂ with six segments, rather short, slender, cylindrical, the first segment narrowed; with a large anal joint supporting the forceps. Legs long and strong; tibiæ spurred and provided with lateral

spines:* a few short ones on the fore tibiæ on the inner side, two rows of long spines on the outer side of the intermediate tibiæ; three ranges on the hind tibiæ, two ranges of long spines on the outer side and one of short ones on the inner side. Wings longer than the abdomen, oblong-oval, with rounded-off base, microscopically pubescent. Anterior branches of the third and fourth longitudinal veins both detached. Auxiliary vein joining the costa considerably before the origin of the third longitudinal vein and opposite to the base of the detached anterior branch of the fourth longitudinal vein, united at about the middle to the first longitudinal vein by the sub-costal cross-vein; costal vein extending far beyond the tip of the second longitudinal vein; first longitudinal vein joining the costa immediately before the base of the detached anterior branch of the third longitudinal vein; marginal cross-vein situated near the tip of the first longitudinal vein; anterior branch of the third longitudinal vein reaching the margin immediately above the apex of the wing; apical half of the third longitudinal bent anteriorly; fourth longitudinal vein much undulated; base of the second posterior cell situated much before the origin of the third longitudinal vein; fifth longitudinal vein incomplete, distinct.

162. Ateleia spadicithorax, sp.n. (Pl. xxxii., fig. 11).

♂.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings	0·110 × 0·040	...	2·79 × 1·01
Size of body.....	0·110 × 0·020	...	2·79 × 0·50

Antennæ slender, longer than the head and thorax taken together; joints of the scapus and first two or three flagellar joints ochraceous, the remainder of the flagellar joints almost cinereous; flagellar joints 1½ to 2½ times longer than wide. Front, vertex and hypostoma deep castaneous. Palpi ochraceous. Thorax very deep castaneous, levigate, the humeri and posterior angles tinged with ochraceous-brown; rather densely covered with a short

* Probably some have been rubbed off in the only two specimens I have before me, both of which are imperfect in other respects.

yellowish pubescence ; brown setæ at the humeri, and on the lateral borders and scutellum ; pleuræ, scutellum and metathorax deep castaneous. Halteres short, fuliginous, the stem ochraceous, with very little visible pubescence. Abdomen rather slender, about twice the length of the thorax ; first three dorsal segments bright brownish-ochraceous marked laterally with a small spot of deep brown, fourth dorsal segment very deep castaneous, almost black, bordered anteriorly, one-third of the segment, with brownish-ochraceous ; first to fourth segment ochraceous beneath ; fifth and sixth segments entirely black ; the large basal portions of the genitalia ochraceous, forceps deep brown. Legs brownish-ochraceous, the hind femora deep brown on the apex ; tibial spurs ochraceous ; spines deep brown. In the fore-legs the tibiæ about $\frac{1}{4}$ longer than the metatarsus (4:3). Wings considerably longer than the abdomen, pellucid with a very pale greyish-brown tint ; two faded brown markings ; a short band begins on the costal border a short distance before the tip of the second longitudinal vein, becoming suddenly very indistinct a little before the anterior branch of the third longitudinal fork and continues on until a little below the posterior branch ; the second is a very indistinct and very small spot on the fourth longitudinal vein a little in advance of the tip of the fifth longitudinal vein ; costal and first two longitudinal veins brown, the rest ochraceous. Auxiliary vein joining the costa some distance before the origin of the third longitudinal vein and about opposite to the base of the detached branch of the fourth longitudinal vein ; sub-costal cross-vein rather pale, very thick, situated about the middle of the auxiliary vein ; first longitudinal vein reaching the costa immediately before the base of the detached branch of the third longitudinal vein ; marginal cross-vein situated a very short distance from the tip of the first longitudinal vein ; costal vein extending beyond the tip of the second longitudinal vein rather more than half the distance from that to the tip of the anterior branch of the third longitudinal ; tips of the third and fourth longitudinal veins and those of their branches very thin and indistinct, all reaching the border ; fifth longitudinal vein pale,

extending more than half-way to the posterior margin; a very short brown stump of a sixth longitudinal vein distinctly visible.

Hab.—Bowral (Masters). January.

Genus 34. Trizygia, gen. nov.

Head small, roundish-oval, flattened on the fore-part, situated deep in the thorax. Ocelli three, of almost equal size, arranged in a triangle on the front. Eyes ovate, a little emarginate on the inner side above. Palpi prominent, incurved, four-jointed, first and second joints short, of about equal length, third as long as the first and second united, fourth slender, about the length of the three preceding (Pl. xxxii., fig. 12a). Antennæ about the length of the head and thorax taken together, projecting forwards, arcuated, 2-+14-jointed, with a short downy pubescence; joints of the scapus cupuliform, the second setose at the apex; flagellar joints cylindrical. Thorax ovate narrower and not so gibbose as in *Aphelomera;* scutellum small, nearly semi-circular; metathorax highly arched, not so high as in *Aphelomera.* Abdomen short, cylindrical, with six segments; anal joint supporting the forceps longer and narrower than the terminal abdominal segment. Legs long, moderately robust; femora compressed, the hind pair much larger and broader than the others; tibiæ spurred, the intermediate and hind pairs with moderately long lateral spines, the former with a few spines on the inner side, and the hind pair with two distinct ranges on the outer side. Wings ovate, rounded off at the base, much shorter and more rounded than in *Aphelomera,* longer than the abdomen, microscopically pubescent, the minute hairs not all of one length as in *Aphelomera,* but of two lengths, the longer ones fewer than, and three or four times longer than the others.* Costal vein extending considerably beyond the tip of the second longitudinal vein, but ending far from the apex of the wing; auxiliary vein ending in the costa beyond the marginal cross-vein,

* The smaller pubescence is even more minute than the pubescence on the wings of *Aphelomera.*

united to the first longitudinal vein by a sub-costal cross-vein; first longitudinal vein joining the costa far beyond the middle of the anterior border of the wing; marginal cross-vein situated considerably before the middle of the first longitudinal vein; third longitudinal vein starting a little before the marginal cross-vein, very little arcuated, reaching the margin far below the tip of the wing, no anterior branch; fourth longitudinal vein a little arcuated, the anterior branch detached, appearing as a short piece of a vein joining the margin; fifth longitudinal missing.

163. Trizygia flavipes, sp.n. (Pl. xxxii., fig. 12).

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·070 × 0·030	...	1·77 × 0·76
Size of body.....	0·080 × 0·015	...	2·02 × 0·38

Antennæ rather slender, about as long as the head and thorax taken together; joints of the scapus and first joint of the flagellum ochraceous, the remainder of the flagellar joints sooty-brown, with a greyish pubescence. Head black, with a short greyish-yellow pubescence. Hypostoma black. Palpi ochraceous-brown. Thorax deep brown, almost black, levigate, densely covered with a greyish-yellow pubescence, the lateral margins and scutellum setiferous; pleuræ, scutellum, and metathorax deep brown. Halteres wholly yellow, with apparently no pubescence. Abdomen about twice the length of, and almost as wide as, the thorax, deep brown, rather densely clothed with greyish-yellow hairs; anal joint and forceps deep brown, densely haired. Legs long, moderately robust, ochre-yellow, the tibiæ and tarsi darker on account of their dense minute pubescence; hind femora slightly brownish at the apex; tibial spurs same colour as the tibiæ and tarsi, the lateral spines brown. In the fore-legs the tarsi nearly twice the length of the tibiæ; the latter longer than the metatarsus. Wings longer than the abdomen, rounded off at the base, almost hyaline, microscopically pubescent, the hairs of two lengths, the longer ones less numerous than the smaller, the latter most numerous on the apical part of the wing; the apex of the wing, also behind the apical

half of the fourth longitudinal vein, faintly clouded with pale yellowish-brown; veins yellowish-brown; auxiliary vein, sub-costal cross-vein, and base of the third longitudinal vein paler than the rest. Tips of the costal and third longitudinal veins about equally distant from the apex of the wing; detached anterior branch of the fourth longitudinal vein starting in the wing-disk mid-way between the third and fourth longitudinal veins and a little before the tip of the first longitudinal vein, joining the posterior margin nearer the tip of the fourth longitudinal vein than that of the third longitudinal vein; fifth longitudinal vein altogether missing.

Hab.—Sydney (Skuse). September.

Genus 35. Aphelomera, gen.nov.

Head small, round, the fore part flattened, situated deep in the thorax. Ocelli three, of almost equal size, arranged in a curved line high on the front. Eyes ovate, a little emarginate above on inner side. Palpi prominent, incurved, four-jointed; first and second joints somewhat robust, first joint small, second twice the length of the first, third rather longer than the first and second taken together and considerably more slender, fourth joint very slender, about equal in length to all the others taken together (Pl. xxxii., fig. 13a). Antennæ arcuated, projecting forwards, longer than the head and thorax combined, very slender, 2-+14-jointed; joints of the scapus of about equal size, cupuliform, both setiferous at the apex; flagellar joints cylindrical, with a dense short pubescence. Thorax ovate, highly arched; scutellum small, almost semicircular; metathorax high, acclivous. Abdomen slender, cylindrical, six-segmented, with an anal joint almost as large as the sixth abdominal segment, and small forceps. Legs long, slender; femora not so robust as the coxæ, compressed; tibiæ spurred, and the intermediate and hind pairs each with two rows of lateral spines. Wings oblong-ovate, longer than the abdomen, rounded off at the base, microscopically pubescent. Costal vein extending far beyond the tip of the second longitudinal vein, stopping a little before the apex of the wing; auxiliary vein joining the

costa a short distance before the marginal cross-vein; the humeral cross-vein very oblique; no sub-costal cross-vein; first longitudinal vein joining the costa at a point $\frac{3}{4}$ of the distance from the root of the wing to the tip of the costa; the marginal cross-vein situated very much before the middle of the first longitudinal vein, at a point about one-third of the length of the latter; third longitudinal vein detached from the second longitudinal vein, starting in the wing-disk considerably beyond the marginal cross-vein, reaching the margin much below the apex of the wing, without any trace of an anterior branch; fourth longitudinal vein joining the posterior margin before the tip of the first longitudinal vein joins the costa, the only trace of an anterior branch being an indistinct, short piece of a vein, quite detached from the fourth longitudinal vein, and joining the posterior margin a short distance in advance of it; fifth longitudinal vein only rudimentary.

164. Aphelomera Sydneyensis, sp.n. (Pl. xxxii., fig. 13).

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·100 × 0·030	...	2·54 × 0·76
Size of body	0·110 × 0·015	...	2·79 × 0·38

Antennæ very slender, tapering towards the tip, nearly twice the length of the head and thorax combined; joints of the scapus yellowish, with short black or deep brown setæ at the apex; flagellar joints cylindrical, 3 to 5 times longer than broad, deep brown, with a dense, short, yellowish-grey pubescence. Hypostoma and front deep umber brown. Palpi yellowish-brown. Thorax deep brown, sub-nitidous, covered with a short yellowish-grey pubescence, with a few long, deep brown, setaceous hairs on the lateral borders; humeri slightly tipped with yellowish-grey; pleuræ brown, lighter than the thorax; scutellum and metathorax deep brown, the former setiferous. Halteres long, stem ochraceous, club elongate, deep brown, with a minute pubescence. Abdomen slender, cylindrical, deep brown, almost black, densely clothed with short yellowish-grey hairs; anal joint and forceps

deep brown. Legs long, slender. Coxæ and femora pale ochraceous; tibiæ cinereous; tibial spurs, lateral spines and tarsi almost fuliginous. In the fore-legs the tarsi more than twice the length of the tibiæ, the latter being almost as long as the metatarsus. Wings a little longer than the abdomen, almost hyaline, with a pale brownish tint, the veins brown; brilliantly iridescent. Auxiliary vein distinct. Costal, first longitudinal and second longitudinal veins running almost parallel to one another, the latter somewhat bent posteriorly towards the tip. Fifth longitudinal very short and indistinct.

Hab.—Elizabeth Bay, near Sydney (Skuse). November.

Obs.—I have found two ♂ specimens only of the above, both collected from windows.

Genus 42. Trichonta, Winn.

Mycetophila, Stæger, Kr. Tidsskr. 1840, pp. 251 and 259 (16 and 27); *Zetterstedt*, Dipt. Scand. XI. pp. 4203 and 4299 (22 and 47); *Trichonta*, Winnertz, V. z.-b. G. Wien, XIII. 1863, p. 847.

Head of a broad oval owing to its high vertex; flattened on the fore part; situated deep in the thorax; front broad, the anterior border advanced triangularly in the middle, the apex of which reaches almost as far as the basal joints of the antennæ. Eyes circular. Ocelli large, the middle one small, situated in a small depression at the base of the frontal triangle. Palpi prominent, incurved, four-jointed; first joint small, the fourth joint longer than the second and third taken together. Antennæ slender, projecting forwards, arcuated, 2-+14-jointed; first joint of the scapus cyathiform, the second cupuliform, both setiferous at the apex; flagellar joints cylindrical, compressed from the sides, with short downy pubescence. Thorax small, oval, highly arched; prothorax hairy, without setæ on its borders; scutellum semicircular, setiferous at the apex; metathorax high, acclivous, somewhat arched. Abdomen of the ♂ with six segments, narrowed at the base, compressed from the sides, with a more or less large anal joint and forceps; in the ♀ with seven segments, narrowed

at the base, generally compressed from the sides, often cylindrical, with short, thick, coarse ovipositor, provided with two lamellæ at the apex. Legs moderately long; hind femora more flattened than the fore pair; tibiæ spurred, and with lateral spines; hind tibiæ and tarsi almost equally long, sometimes the tarsi somewhat shorter. Wings large, extending a little beyond the end of the abdomen, with a rounded off or obtusely cuneiformly narrowed base, microscopically pubescent. Costal vein extending almost imperceptibly beyond the tip of the second longitudinal vein, terminating before apex of the wing; auxiliary vein large, running parallel with the first longitudinal vein, ending, bent downwards, in the first longitudinal vein; marginal cross-vein situated before the middle of the first longitudinal vein; apex of the inner marginal cell lying over the short petiole of the second sub-marginal cell; base of the second posterior cell situated before the base of the second sub-marginal cell, sometimes even before the origin of the third longitudinal vein; fifth longitudinal vein delicate, incomplete, frequently almost missing.

165. Trichonta vegeta, n.sp. (Pl. xxxii., fig. 14).

♀.—Length of antennæ.....	0·050 inch	...	1.27 millimètres.
Expanse of wings.....	0·140 × 0·050	...	3·55 × 1·27
Size of body.....	0·140 × 0·030	...	3·55 × 0·76

Antennæ about the length of the head and thorax taken together, bright brown, the first flagellar joint more than twice as long as broad. Hypostoma and palpi pinkish-yellow. Head greyish-brown, with a short golden-yellow pubescence. Thorax greyish-brown, levigate, rather densely covered with a short golden-yellow pubescence, with two indistinct longitudinal single rows of longer black hairs converging towards the scutellum where they almost meet; humeri rather deeply tipped with greyish-yellow; lateral borders and scutellum with brown setaceous hairs; pleuræ and metathorax deep brown; scutellum brown. Halteres whitish, with a very minute pubescence. Abdomen rather robust, greatly compressed from the sides, from above almost as wide as the

thorax and more than twice its length; dorsal segments deep brown, with a more or less umber tinge, each segment with a narrow border of pale greyish-yellow posteriorly, densely clothed with tolerably long hairs, underneath whitish; ovipositor and lamellæ deep brown. Fore and intermediate coxæ and femora pale greyish-yellow; hind coxæ dark brown; hind femora pale greyish-yellow, deeply tipped with dark brown. Tibiæ and spurs dusky-cinereous; tarsi darker than the tibiæ, almost fuliginous in a certain light. In the fore-legs the tarsi more than twice the length of the tibiæ; the tibiæ somewhat longer than the metatarsus. Wings as long as the whole body, rounded off at the apex, almost hyaline, deeply clouded with blackish at the apex; brilliantly iridescent. Auxiliary vein running very close to the first longitudinal vein, disappearing before joining; costal vein extending very little beyond the tip of the second longitudinal vein; marginal cross-vein situated over the middle of the petiole of the third sub-marginal cell, and slightly before the base of the second posterior cell; fifth short, distinct.

Hab.—Woronora, Illawarra district (Skuse). September.

Obs.—In Winnertz's diagnosis of this genus, that author states that the terminal joint of the palpi is longer than the second and third taken together; in this species the second and third joints are of almost equal length, the third sub-claviform, and the fourth about one-third longer than the third joint, slender, and also sub-claviform.

166. Trichonta illætabilis, n.sp.

♂.—Length of antennæ.....	0·060 inch	...	1·54 millimètres.
Expanse of wings.....	0.110 × 0·040	...	2·79 × 1·01
Size of body	0·100 × 0·020	...	2·54 × 0·50

Antennæ slender, somewhat longer than the head and thorax together; joints of the scapus and first two or three flagellar joints ochraceous, the remainder of the joints brown. Head dusky brown with minute golden-yellow hairs. Hypostoma and palpi ochraceous. Thorax dull greyish-brown, humeri deeply tipped

with greyish-fulvous, densely covered with short golden-yellow hairs, lateral borders and scutellum with brown setaceous hairs; pleuræ, metathorax and scutellum light brown. Halteres yellow, with apparently no pubescence. Abdomen moderately slender, twice the length of the thorax, deep brown, the first, second and third segments with a narrow border of ochraceous posteriorly, tolerably clothed with short golden-yellow hair; anal joint supporting the genitalia about as long as the fifth and sixth abdominal segments together, brown. Coxæ and femora ochraceous, the hind coxæ tinged with brownish, and the hind femora brown at the apex; tibiæ and tarsi sordid ochraceous, the latter darker than the tibiæ, intermediate and hind tibiæ slightly tipped with brown. Tibial spurs sordid ochraceous. In the fore-legs the tarsi twice the length of the tibiæ, the tibiæ scarcely longer than the metatarsus. Wings a little longer than the entire body, rounded off at the apex, almost hyaline, the whole apex of the wing from the tip of the anterior branch of the fourth longitudinal vein distinctly clouded with brownish-grey; brilliantly iridescent. Auxiliary vein indistinctly joining the first longitudinal vein considerably before the origin of the third longitudinal vein; costal vein extending almost imperceptibly beyond the tip of the second longitudinal vein; marginal cross-vein situated over the basal half of the petiole of the third sub-marginal cell, almost in the middle; and imperceptibly before the base of the second posterior cell; fifth longitudinal vein short terminating before the base of the second posterior cell.

Hab.—Lawson (Masters). One specimen. January.

Obs.—Very closely allied to the last.

Genus 51. Mycetophila, Meig.

Mycetophila, Meigen, Illig. Mag. II. 1803, p. 261; Macquart, S. à B. Dipt. I. 1834, p. 128; Stæger, Kr. Tidsskr. 1840, p. 239; Zetterstedt, Dipt. Scand. XI. p. 4174; Walker, Ins. Brit. III. 1856, p. 10; Winnertz, V. z.-b. G. Wien, XIII. 1863, p. 915.

Head somewhat longish round, compressed in the fore part, situated deep in the thorax; front broad, the anterior border elongated triangularly, which extends to the basal joints of the antennæ. Eyes oval. Ocelli two, large. Palpi prominent, incurved, four-jointed; first joint small, the others equally long, or the fourth the longest. Antennæ projecting forwards, arcuated, 2-+14-jointed; joints of the scapus cyathiform, setiferous at the apex; flagellar joints cylindrical, compressed from the side, with short downy pubescence. Thorax ovate, highly arched, with a short pubescence, longer hair on the lateral margins, setiferous on the hind border; scutellum semi-circular or a shortened triangle, setiferous on the border; metathorax highly arched. Abdomen of the ♂ with six segments, of the ♀ with seven segments, more or less compressed from the side, narrowing at the base; anal joint of the ♂ generally small; ovipositor of the ♀ with two lamellæ. Legs robust; femora compressed; tibiæ spurred, the fore pair with small spines on the outer side, the intermediate pair with two ranges of strong spines on the outer side and one range of stronger or weaker ones on the inner side, the hind tibiæ with two or three ranges of short spines on the outer side; metatarsus of the hind tarsi with fine prickles. Wings a little longer than the abdomen, longish-oval, the base rounded off or more obtusely-cuneiformly narrowed, microscopically pubescent. Auxiliary vein incomplete, bent anteriorly; costal vein not extending beyond the tip of the second longitudinal vein and not reaching the apex of the wing; marginal cross-vein situated at, or somewhat beyond, the middle of the first longitudinal vein, and over the base of the second sub-marginal cell, the latter with a short petiole or sessile; base of the somewhat extended second posterior cell situated before, under or a little beyond the base of the second sub-marginal cell; the branches of the fourth longitudinal inclined towards one another at their tips; fifth longitudinal vein incomplete; rudimentary sixth longitudinal vein stout.

167. Mycetophila æqualis, Walker.

Mycetophila æqualis, Walker, Insecta Saundersiana, Vol. I. Diptera, 1856, p. 415 (Div. A. Meig. Dipt. pl. 9, f. 15; Sub-div. a. Vol. VI. p. 297).

"♀.—*Nigra; antennæ basi testaceæ; thorax guttis duabus anticis et abdominis segmenta marginibus posticis testaceis; pedes testacei, femoribus basi fuscescentibus, tarsis fuscis; alæ sub-cinereæ, fusco bifasciatæ; halteres testacei.*

"Black, slightly pubescent. Antennæ testaceous at the base. Thorax with a minute testaceous dot on each side in front. Hind borders of the abdominal segments testaceous. Legs testaceous; femora brownish at the base; tibiæ darker than the femora; tarsi brown. Wings greyish, with two irregular brown bands, which are darkest towards the costa. Halteres testaceous. Length of the body $1\frac{3}{4}$ lines; of the wings $3\frac{1}{2}$ lines.

"Van Diemen's Land."

168. Mycetophila propria, sp.n. (Pl. xxxii., fig. 15).

♀.—Length of antennæ.....	— inch ...	— millimètres.
Expanse of wings.....	0·160 × 0·060 ...	4·06 × 1·54
Size of body.....	0·160 × 0·030 ...	4·06 × 0·76

Antennæ lost, except the joints of the scapus; these are ochraceous, the first much longer than the second, both bristly at the apex. Head ochraceous-brown, densely covered with short golden-yellow hairs; short brown setæ round the hind border of the eyes. Hypostoma and palpi ochraceous; the joints of the latter as follows: first joint small, second rather more robust and longer, third less robust than the second and about one-fourth longer, fourth slender, somewhat claviform, almost as long as the second and third joints taken together (Pl. XXXII. fig. 15a). Thorax ochraceous-brown, densely covered with golden-yellow hairs; deep brown setæ on the lateral margins; pleuræ light ochraceous-brown; setiferous in front of the origin of the wings and above the fore coxæ; scutellum

brown, tinged with ochraceous, with four very long brown setæ ; metathorax brown. Halteres yellow, with a minute pubescence. Abdomen much compressed from the sides, twice the length of the thorax ; segments brown, all except the first and the last two with a narrow border of ochraceous posteriorly, the fifth and sixth segments ochraceous beneath ; densely clothed with short golden-yellow hairs ; ovipositor and terminal lamellæ ochraceous, pubescent. Legs robust. Coxæ and femora bright ochre-yellow ; fore coxæ densely haired in front ; fore femora not as wide as the coxæ, the hind pair very wide, the latter slightly tipped with brown. Tibiæ brownish-ochraceous, hind pair slightly tipped with brown, the fore pair with a few short spines on the outer side, the intermediate pair with three ranges of long spines, one on the inner and two on the outer side, the hind pair with two ranges of long spines on the outer side. Spurs brownish-ochraceous, spines brown. In the fore-legs the tarsi more than twice the length of the tibiæ, the latter rather longer than the metatarsus. Wings longer than the abdomen, rounded off at the base, pellucid, of a pale brownish-yellow tint, with two small distinct light brown spots and faint trace of a third one : the first squarish, between the first longitudinal vein and the base of the anterior branch of the third logitudinal vein, enveloping the marginal cross-vein, as much appearing in the marginal as in the inner marginal cell ; the second spot indeterminate, rather paler than the last, about equal to it in size, filling up the portion of the marginal cell between the tips of the costal and second longitudinal veins, and a short distance from the tip of the latter, extending half-way across the first sub-marginal cell ; a little below this starts a very pale narrow oblique spot, which continues very indistinctly almost to the anterior branch of the fourth longitudinal vein. Marginal cross-vein situated at about the middle of the first longitudinal vein, and over the base of the second sub-marginal cell, the latter sessile ; base of the second posterior cell situated under the base of the second sub-marginal cell ; fifth longitudinal vein not reaching the base of second posterior cell.

Hab.—Glenbrook, Blue Mountains (Masters). November.

Genus 14. Brachydicrania, gen.nov.

Head roundish, compressed in the fore part, situated deep in the thorax; front broad, the anterior border prolonged as a small triangle, which reaches to the basal joints of the antennæ. Eyes longish-round. Ocelli two, large. Palpi prominent, incurved, four-jointed; first joint small, second longer, very robust, third joint sub-clavate, about $\frac{1}{3}$ longer than second, fourth joint very slender, about equal in length to all the others united (Pl. xxxii. fig. 16a). Antennæ projecting forwards, somewhat arcuated, 2-+14-jointed; first joint of the scapus cyathiform, second much shorter than the first, cupuliform, both setiferous at the apex; flagellar joints cylindrical, somewhat compressed from the side, with dense, minute, downy pubescence. Thorax ovate, highly arched, with a short pubescence, setiferous on the lateral and hind borders; scutellum semi-circular, setiferous; metathorax steep. Abdomen slender, in the ♂ with six, and the ♀ with seven segments, narrowed at the base, cylindrical or a little compressed from the side; anal joint of the ♂ moderately large; ♀ ovipositor very short, with two small lamellæ. Legs long, slender; intermediate and hind femora rather broadly compressed; tibiæ spurred, and having lateral spines: fore pair with one distinct range of very small spines on the inner side, and a few very small spines along the outer side, intermediate pair with range of small spines on each side, hind pair with two ranges of longer spines on the outer side; metatarsus of the hind tarsi with some very minute prickles. Wings longer than the abdomen, oblong-oval, with moderately rounded base, microscopically haired.* Auxiliary vein very short, incomplete, directed towards the first longitudinal vein; costal vein not extending beyond the tip of the second longitudinal vein; marginal cross-vein situated about the middle of the first longitudinal vein and over the base of the second sub-marginal cell, the

* The microscopic pubescence on the wings of the four following species, also in *Mycetophila propria*, is arranged in longitudinal rows; I have not observed this in other species.

latter with a shorter petiole; tips of the third longitudinal fork somewhat divergent; second posterior cell short, its base situated much beyond the base of the second sub-marginal cell; the branches of the fourth longitudinal fork divergent; fifth longitudinal vein long, incomplete; sixth longitudinal stout and long.

Obs.—This genus evidently should come between *Mycetophila* Meig., and *Dynatosoma*, Winn.

169. Brachydicrania pullicauda, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·140 × 0·050	...	3·55 × 1·27
Size of body.....	0·170 × 0·025	...	4·31 × 0·62

Antennæ tolerably slender, about as long as the thorax; joints of the scapus pale yellow; flagellar joints pale greyish-ochraceous, longer than broad, rather difficult to distinguish one from the other on account of their very dense minute pubescence. Head brownish-ochraceous, with short black hairs, and a few short setæ at the hinder border of the eyes. Hypostoma and palpi very pale ochraceous. Thorax ochraceous-brown, densely covered with a short pubescence, the lateral borders and scutellum with black setaceous hairs; pleuræ and scutellum ochraceous-brown; metathorax brown, the metanotum with yellowish lateral patches. Halteres yellow, with a very minute pubescence. Abdomen slender, almost cylindrical, rather more than twice the length of the thorax, densely clothed with a short pubescence; first four segments sordid ochraceous, all but the fourth marked superiorly with brown, almost the whole anterior half of the first segment brown, second segment with a triangular spot, third with an oblong spot; fifth and sixth segments brown, narrowly bordered posteriorly with sordid ochraceous; anal joint and forceps sordid ochraceous, densely haired. Coxæ pale ochraceous, the first pair densely covered in front with a short pubescence; femora and tibiæ ochraceous-brown, darker than the coxæ on account of their dense pubescence; tarsi, tibial spurs and spines dusky brown. In the fore-legs the tarsi more than twice the length of the tibiæ; the metatarsal joint

somewhat longer than the tibiæ. Wings pellucid, with a pale greyish-yellow tint, brilliantly margaritaceous; veins brown, the costal and first two longitudinal veins darker than the rest. First longitudinal vein joining the costa a little before the tip of the posterior branch of the third longitudinal vein; petiole of the second sub-marginal cell very short; tips of the branches of the fourth longitudinal as widely separated as those of the third longitudinal, all indistinct; marginal cross-vein situated about mid-way between the origin of the third longitudinal vein and the base of the second posterior cell; fifth longitudinal vein reaching almost to the base of the second posterior cell.

Hab.—Middle Harbour (Skuse). September.

170. Brachydicrania pictiventris, sp.n.

♀.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·120 × 0·045	...	3·04 × 1·13
Size of body...	0·120 × 0·020	...	3·04 × 0·50

Antennæ slender, about the length of the thorax; joints of the scapus ochraceous; flagellar joints cinereous, the basal half of the first, which is much longer than the other joints, ochraceous. Front and vertex brown, with a peculiar hoary bloom when viewed in a certain light, densely covered with a minute pubescence; a few short black setæ in the hinder border of the eyes. Hypostoma ochraceous-brown; palpi ochraceous. Thorax brown, densely covered with a minute golden-yellow pubescence, and having the same hoary appearance as the head, with three indistinct longitudinal single rows of short black hairs, the lateral ones meeting at the scutellum, the intermediate one not reaching the middle of the thorax; lateral borders and scutellum setiferous; pleuræ, scutellum and metathorax deep brown, tinged with ochraceous-brown. Halteres pale yellow, with a row of minute brown hairs. Abdomen slender, more than twice the length of the thorax, densely haired, deep brown, the underside of the segments marked with ochraceous, that of the first and second segments longitudinally, of

the rest transversely, the terminal segment only slightly; ovipositor sordid ochraceous. Coxæ and femora pale yellowish, the fore coxæ pubescent in front, all the coxæ setose at the apex, the intermediate and hind pair slightly tinged with brown at the apex; hind femora with a brown longitudinal spot near the base beneath; tibiæ almost cinereous; tarsi, tibial spurs and spines almost fuliginous. In the fore-legs the tarsi rather more than twice the length of the tibiæ: the latter about the length of the metatarsus. Wings almost hyaline, brilliantly iridescent; costal and first two longitudinal veins dusky brown, the rest yellowish-brown. First longitudinal vein joining the costa somewhat before the tip of the posterior branch of the third longitudinal vein; both branches of the third longitudinal vein, and the anterior branch of the fourth longitudinal, indistinct at the tips; tips of the branches of the fourth longitudinal as widely separated as those of the third longitudinal vein; fifth longitudinal vein terminating a little before the base of the second posterior cell.

Hab.—Sydney (Masters and Skuse).

171. Brachydicrania fumosa, sp.n. (Pl. xxxii. fig. 16).

♂.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·115 × 0·040	...	2·92 × 1·01
Size of body.....	0·120 × 0·020	...	3·04 × 0·50
♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·120 × 0·042	...	3.04 × 1·06
Size of body.....	0·130 × 0·025	...	3·30 × 0·62

♂ and ♀.—Antennæ slender, rather longer than the head and thorax taken together; joints of the scapus ochraceous; flagellar joints brown, the very dense short pubescence with a hoary reflection. Front and vertex deep brown, densely covered with a minute golden-yellow pubescence Hypostoma brown or ochraceous-brown; palpi ochraceous. Thorax deep brown, densely covered with a minute golden-yellow pubescence, with three indistinct longitudinal single rows of short black hairs, the lateral ones meeting at the scutellum, the intermediate one not reaching

so far; lateral borders with black setæ; pleuræ, scutellum, and metathorax deep brown, long black setaceous hairs on the scutellum. Halteres yellow. Abdomen slender, more than twice the length of the thorax, densely haired, deep brown, the segments marked beneath with ochraceous, more distinctly in the ♀ than in the ♂; in both sexes the first and second segments are marked longitudinally, in the ♂ the third and fourth segments only are distinctly transversely marked, while in the ♀ the transverse markings are also usually distinct on all the other segments; ♂ anal joint and forceps ochraceous-brown, densely haired; ♀ ovipositor very small, sordid ochraceous. Coxæ and femora ochraceous, sometimes pale, sometimes with an almost ferruginous tinge; fore coxæ covered in front with short hairs, all pairs setose and slightly tinged with brown at the apex; base of the hind femora brown, intermediate and hind pairs slightly tipped with brown at the apex; tibiæ light umber brown; tarsi, tibial spurs, and spines dusky brown. In the fore-legs the tarsi three times the length of the tibiæ; the latter shorter than the metatarsus. Wings pellucid with a slightly yellowish tint, the whole apex, from the tip of the anterior branch of the fourth longitudinal vein, clouded with pale greyish-brown, also a very slight appearance behind the fourth longitudinal vein from the tip of the fifth longitudinal vein to the wing margin; brilliantly iridescent; veins yellowish-brown. First longitudinal vein joining the costa opposite to the tip of the posterior branch of the third longitudinal vein; branches of the third longitudinal fork pale at their tips; anterior branch of the fourth longitudinal vein rather pale, particularly at its tip; fifth longitudinal vein reaching almost to the base of the second posterior cell.

Hab.—Lawson, Blue Mountains (Masters).

172. Brachydicrania abbreviata, sp.n.

♂.—Length of antennæ.....	0·060 inch	...	1·54 millimètres.
Expanse of wings.....	0·095 × 0·035	...	2·39 × 0·88
Size of body.....	0·110 × 0·015	...	2·79 × 0·38

♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·110 × 0·040	...	2·79 × 1·01
Size of body.....	0·120 × 0·020	...	3·04 × 0·50

♂ and ♀.—Antennæ slender, longer than the head and thorax taken together; joints of the scapus ochraceous; flagellar joints brown, their very dense minute pubescence with a hoary reflection. Front and vertex black, densely covered with a minute golden-yellow pubescence; a few short black setæ on the hinder border of the eyes. Hypostoma brown; palpi ochraceous. Thorax brown, densely covered with a minute golden-yellow pubescence, with three indistinct longitudinal single rows of short black hairs, the lateral ones extending nearly to the scutellum, where they almost meet, the intermediate one reaching to about the middle of the thorax; lateral borders setaceous; pleuræ, scutellum and metathorax brown, the scutellum with a few very long black setæ and a short golden-yellow pubescence. Halteres yellow, with a minute pubescence. Abdomen moderately slender, about twice the length of the thorax, densely haired; in the ♂ deep brown, in the ♀ deep brown, each segment except the last, marked underneath with ochraceous, the first two segments longitudinally marked, the third to sixth transversely; anal joints and forceps of the ♂ ochraceous-brown, densely haired; ♀ ovipositor very short, sordid-ochraceous. Coxæ and femora ochraceous, all the coxæ with a few short setæ at the apex; tibiæ light umber; tarsi, tibial spurs and spines dusky brown, the tarsi nearly fuliginous. In the fore-legs the tarsi about $2\frac{1}{2}$ times the length of the tibiæ; the latter as long as the metatarsus. Wings almost hyaline, beautifully iridescent; costal and first two longitudinal veins deep brown, the rest yellowish-brown. First longitudinal vein joining the costa a little before the tip of the posterior branch of the third longitudinal vein; branches of the fourth longitudinal vein pale towards their tip; fifth longitudinal vein reaching almost to the base of the second posterior cell.

Hab.—Sydney (Skuse). November.

EXPLANATION OF PLATES.

Plate XXXI.

Fig. 1. Wing of *Macrocera decorosa*.
Fig. 2. ,, ,, *Mastersi*.
Fig. 3. ,, *Ceroplatus Mastersi*.
Fig. 4. ,, *Heteropterna Macleayi*, 4a, head from above, 4b, head from beneath ; 4c, ♂ genitalia ; 4d, fore-leg ; 4e, hind-leg.
Fig. 5. Wing of *Platyura fenestralis*.
Fig. 6. ,, ,, *graphica*.
Fig. 7. ,, *Pseudoplatyura dux*, 7a, palpi.
Fig. 8. ,, *Antriadophila petulans*, 8a, palpi.
Fig. 9. ,, *Homaspis meridiana* , 9a, palpi ; 9b, ♂ genitalia.

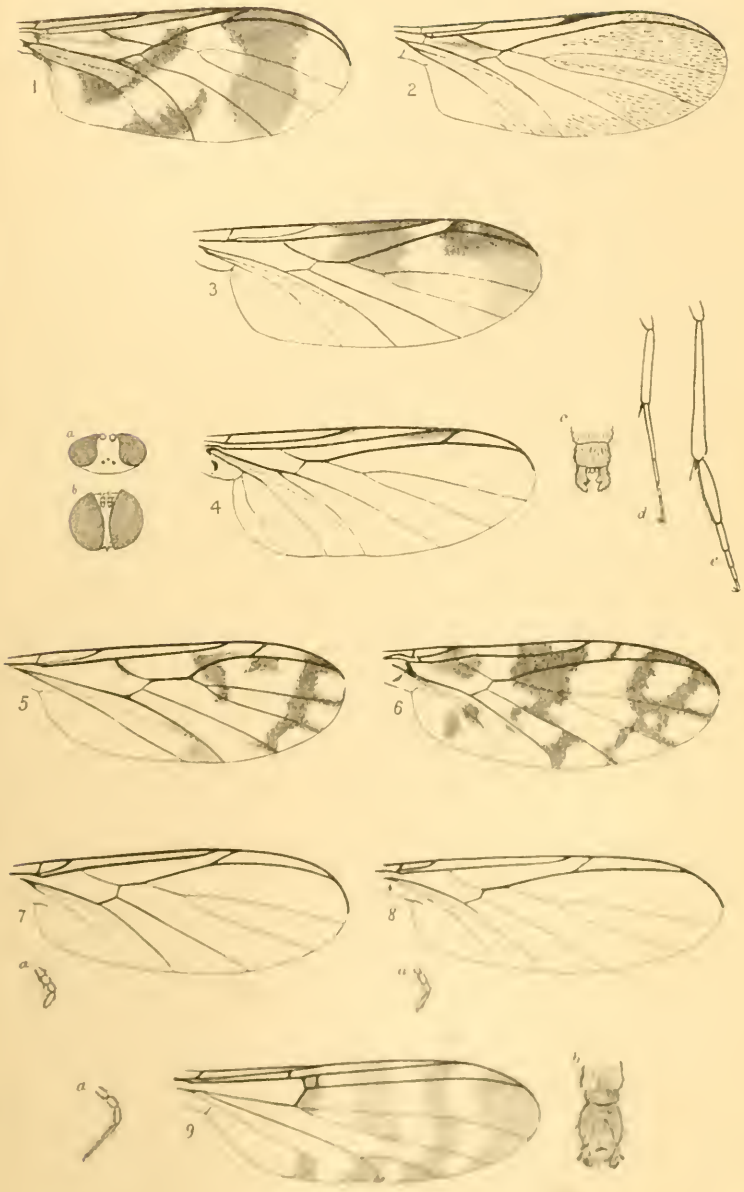
Plate XXXII.

Fig. 10. Wing of *Acrodicrania atricauda*, 10a, palpi.
Fig. 11. ,, *Ateleia spadicithorax*, 11a, palpi.
Fig. 12. ,, *Trizygia flavipes*, 12a, palpi.
Fig. 13. ,, *Aphelomera Sydneyensis*, 13a, palpi.
Fig. 14. ,, *Trichonta vegeta*.
Fig. 15. ,, *Mycetophila propria* , 15a, palpi.
Fig. 16. ,, *Brachydicrania fumosa*, 16a, palpi.
Fig. 17. Diagram illustrating the terminology for the veins and cells.

[*The right-hand column denotes the German equivalents of Winnertz* (*Beit. zu einer Mon. der Pilzmücken, 1863*)].

Veins.		*Adern.*
Costa (*v. costalis*).	a, b, c.	Randader.
Transverse shoulder-vein (*v. trans. humeralis*).	d.	Hülfsader.
Auxiliary (*auxiliaris*).	e.	Hülfsader.
Sub-costal cross-vein (*v. trans. subcostalis*).	f.	Randfeldquerader.
1st longitudinal (*v. long 1ma*).	a, b.	Unterrandader.
Marginal cross-vein (*v. trans. marginalis*).	g.	Mittlere Querader.

Veins.	*Adern.*
2nd longitudinal *(v. long. 2da)*. a, c.	Mittelader + Ellbogenader.
Anterior branch *(v. long. 2da ramus anterior)*. h.	Brachialader.
3rd longitudinal *(v. long. 3a)*. k, l, m.	Mittlere Scheibenader.
Anterior branch *(v. long. 3a)*. l, n.	Obere Scheibenader.
4th longitudinal *(v. long. 4a)*. a, p, q.	Hinterader.
Anterior branch *(v. long. 4a ramus anterior)*. p. r.	Untere Scheibenader.
5th longitudinal *(v. long. 5a)*. s.	Achselader.
6th longitudinal *(v. long. 6a)*.	Afterader.
Cells.	*Zellen.*
Costal *(c. costalis)*. A.	———
Sub-costal *(c. subcostalis)*. B.	Randzelle.
Inner marginal *(c. marginalis interior)*. C.	Schulterzelle.
Marginal *(c. marginalis)*. D.	Vordere Cubitalzelle, or Mittelzelle.
1st sub-marginal *(c. submarginalis 1ma)*. E.	Hintere Cubitalzelle.
2nd sub-marginal *(c. submarginalis 2da)*. F.	Obere Scheibenzelle.
3rd sub-marginal *(c. submarginalis 3a)*. G.	Mittlere Scheibenzelle.
1st posterior *(c. posterior 1ma)*. H.	Untere Scheibenzelle.
2nd posterior *(c. posterior 2da)*. I.	Hinterzelle.
Axillary *(c. axillaris)*. K.	Achselzelle.



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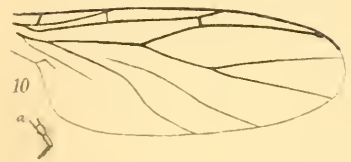

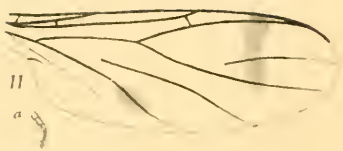

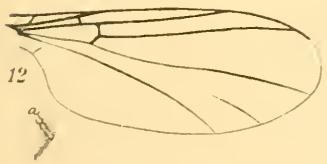

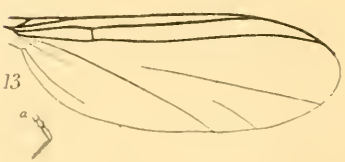

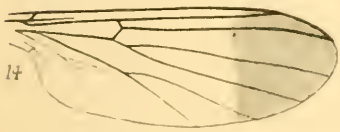

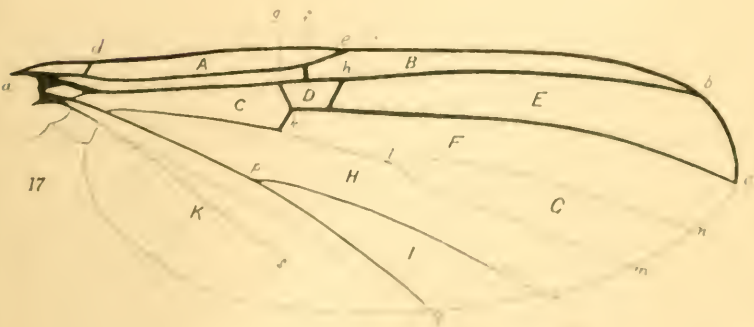

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